



# LEBANON

**Case study on policy regulatory reforms and financial and legal frameworks to promote small-scale renewable energy technologies and applications in rural areas**



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**Economic and Social Commission for Western Asia**

**Case study on policy regulatory reforms  
and financial and legal frameworks to promote  
small-scale renewable energy technologies and  
applications in rural areas**

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# Preface

This case study was developed by the Energy Section in the Climate Change and Natural Resource Sustainability Cluster (CCNRSC) of the United Nations Economic and Social Commission for Western Asia (ESCWA) within the framework of the “Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region” (REGEND), implemented by ESCWA in partnership with the Swedish International Development Cooperation Agency (SIDA).

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The public consultation and peer review process was coordinated by ESCWA, including by organizing a webinar on “[Lebanon’s policy regulatory reforms and financial and legal frameworks needed to promote small-scale renewable energy technologies and applications in rural areas](#)” in April 2021. Valuable comments and substantive contributions were provided by national experts, as follows:

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The REGEND project aims to improve livelihoods and economic benefits in rural communities, particularly among marginalized groups, and to promote social inclusion and gender equality. It seeks to satisfy energy needs and showcase the effectiveness of the bottom-up approach in achieving results by addressing energy poverty, water scarcity and vulnerability to climate change and other natural resources challenges. Pro-poor investments will be promoted using appropriate small-scale renewable energy technologies to facilitate productive activities and stimulate entrepreneurial development.

The case study builds on the REGEND baseline study “[Assessment Report of Prevailing Situations in Rural Areas of Lebanon](#)” and the “[Study on Gender Mainstreaming, Social Inclusion, Human Rights Processes and Outcomes of Access to Energy in Targeted Local Communities in Lebanon](#)”. This study tackles Lebanese policy and regulatory reforms and financial and legal frameworks needed to promote small-scale renewable energy technologies and applications in rural areas through an integrated approach. The study therefore analyzes the national strategies and policies for rural development and assesses the ground-level regulations for rural productive activities that could promote both small-scale renewable energy technologies and entrepreneurial development and attract private investments. It also assesses a gender-specific line to promote women’s economic empowerment to access the market and provides guidelines for the design and implementation of policies and regulatory, financial and legal frameworks to support rural development programmes that are economically, environmentally, socially and institutionally sustainable. Finally, the study presents some recommendations.

**Project: Regional Initiative to Promote Small-Scale  
Renewable Energy Applications in Rural Areas of the Arab  
Region (REGEND) - November 2021**

# Executive summary

The United Nations Economic and Social Commission for Western Asia (ESCWA) is implementing the “Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region” (REGEND) in partnership with the Swedish International Development Cooperation Agency (SIDA).

The REGEND project aims to improve livelihoods and economic benefits in rural communities, particularly among marginalized groups, and to promote social inclusion and gender equality by adopting small-scale renewable energy technologies to facilitate productive activities and stimulate entrepreneurial development.

Falling within the REGEND framework, this case study aims to tackle Lebanese policy regulatory reforms and financial and legal frameworks that are needed to promote small-scale renewable energy technologies and applications in rural areas through an integrated approach.

Rural areas in Lebanon have been marginalized and suffer from unsustainable and uneven development. Although rural development has been on the agenda of successive Lebanese governments, policymaking has long been hindered by the absence of political stability.

Rural development used to be perceived as the development and expansion of the agricultural sector. The most comprehensive strategies linked to rural development were those related to agriculture. A rural tourism strategy was also developed to include high-level goals. However, an inclusive rural development strategy is still lacking. Various national strategies, such as the national electricity, water and women strategies, are critical for rural development, although they do not directly tackle rural areas and particularities. These strategies fall within the framework of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), which Lebanon has adopted in 2015.

In the absence of a complete framework, it has become difficult to develop inclusive national strategies that integrate the rural component and issue coherent rural productive activities and policies. The various strategies are therefore fragmented and mostly do not account for the rural context. The strategies are also constrained by the lack of an inclusive framework, coordination mechanisms, data collection and sharing between the stakeholders that would enable evidence-based policies, and public dissemination of data and objectives. Other major shortcomings include the lack of measurable follow up indicators, the absence of financing mechanisms and the lack of an integrated approach to sustainable development, including climate change mitigation and natural resources management. There are also no clear indicators for equal access of women to resources and opportunities.

On the institutional level, rural development has been undermined by the absence of a dedicated institutional capacity and the lack of a consolidated policy and regulatory framework.

Considering the historic role of agriculture in the rural economy, the Ministry of Agriculture (MOA) has been the most linked to rural development. Nonetheless, roles and functions are overlapping across ministries, and this fragmentation on the institutional level is producing a fragmentation of data collection that limits the ability to adopt evidence-based policies and optimize implementation.

On the legal front, the overlapping agencies operate as per their respective mandates and regulations. The quasi-absence of rural development is linked to the absence of an integrated planning and regulatory framework. As such, several regulations apply to the rural context but are fragmented and face implementation challenges.

Political and economic uncertainties and the lack of policy consistency and comprehensive strategy negatively impact the ability to attract investments. Financial





# Recommendations

The series of crises in Lebanon creates new policy drivers that emphasize the need for an integrated rural development strategy. These drivers include ensuring food security, promoting sustainable and equitable growth, alleviating economic pressure and trade imbalance, creating jobs and reducing unemployment, developing more inclusive policy and consultation, and the recent institutional support for rural development.

## 1. Strategy and policy formulation

A strategy should be developed to create rural economic growth, of which affordable and clean electricity is an enabler. The strategy should adopt a participatory approach, with emphasis on the needs of the local communities, and can build on the existing tools for monitoring and evaluation. It should include specific indicators to measure the level of integration of the natural resources management and climate change, as well as indicators for women's inclusion and monitoring and evaluation. A set of guidelines, including 10 expected outcomes and 41 actions, are set to assist in policymaking. The expected outcomes include rural socioeconomic growth; women's inclusion and empowerment; resource optimization; investments attraction; entrepreneurship promotion; technology-transfer and innovation; enhanced competitiveness, deployment and financing mechanisms optimization; and improved governance.

## 2. Legal and regulatory framework

A rural development framework should be adopted to govern rural development and should incorporate climate change and environmental laws as well as an agriculture regulation integrating the food security law. The framework should build on existing or enhanced regulations through amending the water law and clearing all laws from all sorts of discrimination against women. Climate change legislation should be adopted in line with the Paris Agreement and the Nationally Determined Contribution (NDC) of Lebanon, and should include rural targets. Moreover, the Lebanese Parliament should approve renewable energy and energy efficiency laws and the decentralized law. Trade agreements should be optimized along with trade reforms to ease the exports process.

## 3. Institutional setting

Providing institutional support through a dedicated institution for rural development is critical. The transformation of the Ministry of Displaced into a ministry of rural development can facilitate the strategy development and implementation, along with assigned focal points in relevant institutions. The ministry of rural development should closely coordinate with the different international organizations and local non-governmental organizations (NGOs), and a permanent political committee should be formed to mitigate political instability.

## 4. Financial mechanisms

Small-scale systems present an opportunity for more innovative deployment models that can attract financing and channel diaspora and donor grants to rural economic growth. Financing mechanisms, such as soft loans, should be developed with local and international finance institutions to alleviate the barriers for women's economic inclusion. The diaspora should be engaged within a certain framework, such as crowd funding, to develop their villages through small-scale projects. Donor energy grants should be channelled more towards rural productive activities, and rural micro, small and medium-sized enterprises (MSMEs) should receive fiscal and tax incentives following the implementation of a small-scale system. Additionally, corporate social responsibility should seek economic benefits in rural areas and include small-scale renewable energy.

## 5. Capacity building programmes

Women entrepreneurship should be promoted to increase local content and production. Training on kick-starting and managing a cooperative and a business should be delivered to rural women, in addition to the necessary skills to grow the business and increase revenue streams. To achieve that, capacity building in marketing, digital marketing and branding is also necessary. Technical capacity building through incubators and boot camps is critical in minding the gaps in women's technical skills. Increasing exports also requires capacity building and guidelines on trade agreements, required standards and trading markets.

# Abbreviations

<b>AFD</b>	Agence Française de Développement
<b>ARDP</b>	Agriculture and Rural Development Programme
<b>AUB</b>	American University of Beirut
<b>BDL</b>	Banque Du Liban – Central Bank of Lebanon
<b>CCNRSC</b>	Climate Change and Natural Resource Sustainability Cluster
<b>CDR</b>	Council for Development and Reconstruction
<b>CEDRE</b>	Conférence Economique pour le Développement
<b>EDL</b>	Electricité du Liban
<b>EEAS</b>	European External Action Service
<b>EIB</b>	European Investment Bank
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FDI</b>	foreign direct investments
<b>GDP</b>	Gross domestic product
<b>IDAL</b>	Investment Development Authority of Lebanon
<b>IFC</b>	International Finance Corporation
<b>IMF</b>	International Monetary Fund
<b>IsDB</b>	Islamic Development Bank
<b>IWSAW</b>	Institute for Women’s Studies in the Arab World
<b>LARI</b>	Lebanese Agriculture Research Institute
<b>LCEC</b>	Lebanese Center for Energy Conservation
<b>LEEREFF</b>	Lebanon Energy Efficiency & Renewable Energy Finance Facility
<b>LFC</b>	Lebanese Federation of Cooperatives
<b>LIVCD</b>	Lebanon Industry Value Chain Development
<b>LRA</b>	Litani River Authority
<b>MSMEs</b>	micro, small and medium-sized enterprises
<b>NEEREA</b>	National Energy Efficiency and Renewable Energy Action
<b>NCLW</b>	National Commission for Lebanese Women
<b>NDC</b>	Nationally Determined Contribution
<b>NEEAP</b>	National Energy Efficiency Action Plan
<b>NGOs</b>	non-governmental organizations
<b>NREAP</b>	National Renewable Energy Action Plan
<b>OMSAR</b>	Office of the Minister of State for Administrative Reform
<b>SMEs</b>	small and medium enterprises
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>REGEND</b>	Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region
<b>RMF</b>	René Moawad Foundation
<b>SDG</b>	Sustainable Development Goals
<b>SIDA</b>	Swedish International Development Cooperation Agency
<b>STEM</b>	Science, Technology, Engineering and Math
<b>UNDP</b>	United Nations Development Programme
<b>ESCWA</b>	Economic and Social Commission for Western Asia
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>USAID</b>	United States Agency for International Development
<b>WEF nexus</b>	water-energy-food nexus

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# Introduction

Rural areas in Lebanon are characterized by low income, poverty concentration and climate change vulnerability. Agriculture is the main income source, and the most vulnerable rural populations are smallholders of farming and poultry production, daily workers and women. Yet, agriculture suffers from land fragmentation, traditional methods, high energy costs and water inefficiency, with around 50 to 70 per cent of irrigation done through inefficient flooding.<sup>1</sup>

Climate change is worsening the situation by negatively impacting agriculture by causing soil erosion and increasing the pressure on water. Water is further stressed by the increasing demand and pollution.

The rural economy, on the other hand, is weak, as productive activities suffer from an uncompetitive economy, high operating costs and low compliance with international standards, thereby limiting export opportunities. Moreover, women's economic participation is low and hindered by legal, cultural and social norms. Uneven development has resulted in degrading rural infrastructure and public services.<sup>2</sup>

Rural areas in Lebanon have been marginalized and suffer from unsustainable and uneven development. The rural economy has therefore been weak and poverty has been prevalent among the rural population. Political instability has been detrimental to the adoption and implementation of a comprehensive rural development strategy that accounts for climate change adaptation and the water-energy-food nexus (WEF nexus). This has been further exacerbated by on-going financial and economic crises, the global COVID-19 pandemic and a blast that rocked Beirut, the Lebanese capital, on 4 August 2020. In March 2019, Lebanon defaulted on its debt for the first time in history, and the country has witnessed large capital outflows, causing the economy to contract by 25 per cent between 2019 and 2020, according to the International Monetary Fund (IMF) World Economic Outlook Database – October 2020.<sup>3</sup> By October 2020, the Lebanese pound had lost 80 per cent of its value against the United States dollar on the black market compared to a year earlier.

In this context, small-scale renewable energy technologies and applications provide an opportunity to be an enabler of sustainable rural development through their adoption into integrated business models that would enhance competitiveness in productive activities and attract investments and funds.

To tackle this, ESCWA is implementing the “Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region” (REGEND) Project, in partnership with the Swedish International Development Cooperation Agency (SIDA). This case study falls within the REGEND framework.

The first chapter is an introduction that sets the general overview of the situation in rural areas in Lebanon, the weak national economy, the challenges the country is facing and the role of small-scale renewable energy technologies and applications.

The second chapter covers the national rural development strategies and policies, including the policy drivers, identification of the shortcomings, assessment of the legal and institutional framework and the prospects of attracting investments.

The third chapter assesses the role of small-scale renewable energy in re-considering rural development through a comprehensive and sustainable approach. The chapter also details the impact of their rural application on the national and local levels from the social, environmental and financial perspectives.

The fourth chapter covers the policy and regulatory framework, as well as the financial challenges hindering rural women's economic participation and the role of capacity building and creating synergies in entrepreneurship, technology and renewable energy.

The fifth chapter covers the challenges and opportunities of small-scale renewable energy in rural areas. The sixth chapter issues criteria for an integrated policy design and implementation, including drivers for policy alternatives, legal and regulatory framework and financial guidelines. The last chapter presents recommendations for rural development considerations.





# 01 National strategies and policies for rural development

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## A. Assessment of national policy drivers

Rural development has been on the agenda of the successive Lebanese governments, yet development strategies and implementation face challenges posed by the local and regional political contexts.

In general, policymaking in Lebanon is hindered by the absence of political stability and consistency. Yet, several factors have been driving policymaking in Lebanon, including:

### **1. Improving rural life conditions**

One of the expected outcomes of the Council for Development and Reconstruction's (CDR) National Physical Master Plan of the Lebanese Territory<sup>4</sup> is to ensure that adequate income is provided to the rural population to improve its life conditions and strengthen stabilization. The implementation of the master plan is crucial for agriculture productivity.

### **2. Improving agriculture productivity**

A primary goal of the Ministry of Agriculture strategy is to develop the sector in order to increase productivity, including food safety.<sup>5</sup> The Lebanon Crisis Response Plan calls for increasing food security and improving the resilience of the agriculture sector by promoting

sustainable agriculture production and integrating rural livelihoods opportunities focusing on the humanitarian-development nexus,<sup>6</sup> to be implemented in line with the agriculture strategy.

### **3. Reducing greenhouse gas emissions and increasing the share of renewables in the energy mix**

The revised Nationally Determined Contribution (NDC) of Lebanon under the United Nations Framework Convention on Climate Change (UNFCCC) aims to reduce the country's emissions by 15 per cent to 30 per cent against the business as usual scenario by 2030,<sup>7</sup> depending on the level of international support, and increase the renewable energy target. Energy constitutes a key mitigation sector, with a government renewable energy target increased from 12 per cent by 2020 to 30 per cent of total electricity and heat by 2030. The key adaptation sectors include agriculture, water and the environment. The revised NDC also includes the identification of climate sectors for gender mainstreaming.

### **4. Women's empowerment**

Lebanon has ratified the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) in 1997 and has established the National Commission for Lebanese Women (NCLW) in 1998. The country has also adopted SDG 5 to "achieve gender equality and empower all women and girls" as a human right and an enabler of socioeconomic development and sustainability.



Empowering women, including rural women, is driven by the socioeconomic needs resulting in increased poverty and poor access to education and health.<sup>8</sup>

These policy drivers have existed for years, yet the economic crisis and the global COVID-19 pandemic have exposed the country's vulnerability, emphasizing the need for action. As a result of the political instability, policymaking in several sectors, such as development, gender and the environment, was compromised in favour of economic recovery.<sup>9</sup> The economy became the main driver for development policy under the premise that economic growth would resolve social issues.<sup>10</sup>

## B. Assessment of current policies and regulations

Rural development used to be perceived as the development and expansion of the agricultural sector. The most comprehensive strategies linked to rural development were the agriculture strategies for the periods between 2010-2014 and 2015-2019, and for 2020, which have been issued by the Ministry of Agriculture. This approach started changing in February 2020 with Decree No. 28/1 that established a ministerial committee to develop rural areas and strengthen the social safety net. That was followed by the formation of a technical committee to define an integrated approach for the design of a rural development strategy. The strategy is still in its early stages, and a baseline study will be developed in the upcoming phase in order to issue its high-level guidelines.

As an inclusive rural development strategy is not yet developed, and in addition to the agriculture strategy, a rural strategy launched by the Ministry of Tourism (MOT) in 2015 focused on additional productive activities other than agriculture, such as the different types of touristic activities, including hiking trails and guest houses, culture and heritage discovery, and arts and crafts. Various national strategies, such as the national electricity, water and women strategies, are also critical for rural development, although they do not directly tackle rural areas in a cross-cutting manner. All these strategies fall within the framework of the 2030 Agenda for Sustainable Development and the SDGs.

### 1. Forthcoming rural development strategy

A high-level presentation on the works of the ministerial committee on rural development, published in June 2020, highlights that the strategy will aim to support the vitality of rural areas and the well-being of the rural population. The success of the strategy is linked to the provision of key factors, including schools, health care, job creation and social security.

The strategy will therefore include a set of policies that will aim to tackle the socioeconomic and environmental issues in rural areas by assessing resources and supporting the touristic, cultural and environmental heritage. The strategy will also focus on decentralized governance to improve service provision through close collaboration with the local authorities, civil society organizations and the private sector.

The strategy key principles, as per the ministerial committee, are:

**Table 1. Rural development strategy key principles**

Principal #	Description
1	Maximizing the potential and capabilities of all rural areas
2	Organizing policies and governance at relevant geographic levels
3	Supporting cooperation and interdependence between urban and rural areas
4	Promoting entrepreneurship to create job opportunities in rural areas
5	Aligning the various strategies for public service delivery with rural policies
6	Enhancing the social, economic, environmental and cultural resilience of rural communities
7	Implementing a comprehensive governmental approach to rural policies

**Source:** Lebanon Ministerial Committee for Rural Development and Strengthening Social Safety Net, (2020), Rural Development Strategy, pp. 14-15. Available at [http://www.ministryofdisplaced.gov.lb/getattachment/%D8%A7%D9%84%D8%AA%D9%86%D9%85%D9%8A%D8%A9-%D8%B1%D9%8A%D9%81%D9%8A%D8%A9/%D8%A7%D9%84%D9%87%D9%8A%D9%83%D9%84-%D8%A7%D9%84%D8%AA%D9%86%D8%B8%D9%8A%D9%85%D9%8A/MOD-Rural-Development-Committee-V4-RDTC-200620-FINAL-AR-\(1\).pdf?lang=ar-LB](http://www.ministryofdisplaced.gov.lb/getattachment/%D8%A7%D9%84%D8%AA%D9%86%D9%85%D9%8A%D8%A9-%D8%B1%D9%8A%D9%81%D9%8A%D8%A9/%D8%A7%D9%84%D9%87%D9%8A%D9%83%D9%84-%D8%A7%D9%84%D8%AA%D9%86%D8%B8%D9%8A%D9%85%D9%8A/MOD-Rural-Development-Committee-V4-RDTC-200620-FINAL-AR-(1).pdf?lang=ar-LB).

The ministerial committee includes the Prime Minister, the Deputy Prime Minister and the Ministries of Labour, Finance, Industry, Agriculture, Social Affairs, Public Health, Trade and Economy, Interior

and Municipalities, Youth and Sports, Tourism and Displaced.<sup>11</sup> In September 2020, the Ministry of Displaced, appointed to lead the technical committee on rural development, announced the launch

of the corresponding programme that will develop the strategy. The Ministry also aims to transform itself into the ministry of rural development, especially since the majority of the displaced are from rural areas. A pilot survey has been sent to six municipalities and will be later disseminated to all municipalities to collect the necessary data needed for the development of the strategy's baseline study.

## 2. Agriculture strategy

In April 2020, the Ministry of Agriculture adopted an emergency plan to promote local production in order to reduce the gap between demand and local supply and achieve food security in light of the economic situation and the COVID-19 pandemic that has disrupted supply chains. The Ministry's compressed emergency plan is based on the five-year strategy launched in 2014 for the period 2015-2019, which was based on lessons learnt from the 2010-2014 strategy.

The 2020 plan, which includes six courses of action, aims to increase agriculture areas, productivity and self-sufficiency. To achieve that, the plan focuses on ensuring the continuous import of

crops, equipment and fertilizers at subsidized rates, and importing large quantities of foodstuff for storage. The courses of action include a provision for water by promoting collaboration with the Ministry of Energy and Water (MOEW) and raising awareness on efficient water usage.<sup>12</sup>

The 2014 strategy focuses on good governance, management, capacity building and research in the sector to reach three objectives: (a) ensure safe and quality food; (b) increase the sector's contribution to the socioeconomic development; and (c) promote sustainable management of natural resources.<sup>13</sup> The strategy is in line with SDG 2 target to "end hunger, achieve food security and improved nutrition, and promote sustainable agriculture".

Therefore, the strategy aims to help reduce poverty and decrease rural-urban migration by increasing household incomes, creating jobs and promoting efficiency and sustainability in the sector. For this purpose, the strategy adopts eight courses of action that include 30 components and 104 areas of intervention (table 2).

**Table 2. Agricultural strategy courses of action**

Course of action #	Description
I	Improving food safety and quality of locally produced and imported products
II	Increasing productivity and competitiveness of the Lebanese agricultural products
III	Improving the good governance and sustainable use of natural resources
IV	Strengthening agricultural extension and education
V	Strengthening agricultural research and laboratories
VI	Developing the cooperative sector and mutual funds
VII	Developing the capacities of the Ministry of Agriculture
VIII	Responding to climate change impacts

**Source:** Lebanon Ministry of Agriculture, (2014) Ministry of Agriculture Strategy 2015-2019, pp. 31-38. Available at <http://extwprlrgs1.fao.org/docs/pdf/leb149670.pdf>.

The strategy operates on different levels, including (a) the national level in terms of spending, production and revenues, which are not dependent on the Ministry of Agriculture; (b) the ministerial level, where the Ministry is in charge of sustainable management, decentralization and issuing the necessary regulations; and (c) the local level, where the strategy aims to stabilize the rural population and increase its share in the agriculture workforce, as well as mitigate the reduction in farmers income while also increasing overall household income.

In addition to the Ministry, government institutions, such as the Lebanese Agriculture Research Institute (LARI) and the Green Plan, as well as donor-supported projects, such as the European Union (EU)-funded Agriculture and Rural Development Programme

(ARDP), play an important role in providing institutional support and implementing parts of the strategy. Key stakeholders also include various agriculture cooperatives and technical agriculture schools.

In 1964, LARI, which is part of the REGEND Local Facilitating Team, was established as an autonomous public institution, having previously been the Department of Agricultural Scientific Research at the Ministry of Agriculture. The Institution has been supported by various international agencies, including the Food and Agriculture Organization (FAO), the United Nations Development Programme (UNDP) and the International Center for Agricultural Research (ICARDA). It currently has eight experimental stations across Lebanon, and transfers its research findings directly to local farmers. The Green Plan was established in 1963 as an autonomous

public institution, funded by Ministry of Agriculture. Its mandates include implementing irrigation projects, agriculture roads and rainwater reservoirs.<sup>14</sup>

The ARDP was established in 2011 to improve the agricultural sector's performance and achieve sustainable food security by strengthening the capacity of national institutions and supporting local rural actors, including farmers and cooperatives.<sup>15</sup>

### 3. Rural tourism strategy

The five-year rural tourism strategy aims to provide general key directions and practical actions to improve the competitiveness of the rural tourism value chain. The expected outcome of the strategy is increasing the rural population's economic opportunities through enhanced competitiveness throughout the

value chain, including rural tourism, agriculture and food products. The strategy therefore includes three objectives, including (a) setting areas of intervention to improve rural tourism capacity and attractiveness; (b) highlighting key action plans with stakeholders and linkages across the value chain; and (c) promoting cooperation among stakeholders.<sup>16</sup>

The directions revolve around increasing marketing and promoting rural tourism, engaging the local communities and involving institutions and law enforcement for environment and cultural protection. The strategy also focuses on the social benefits, such as more social cohesion and integration, and conservation of culture, environment and social heritage.

To achieve its objectives, the strategy adopts strategic directions that include 21 action plans and 62 activities (table 3).

**Table 3. Rural tourism strategy strategic directions**

Strategic direction #	Description
1	Developing and improving marketing and promotion to increase consumer awareness and the visibility of rural tourism destinations, products and services, both domestically and internationally
2	Institutionalizing rural tourism at the level of local communities
3	Improving and enforcing conservation and protection of the environmental, cultural, historical and agricultural heritage of rural areas
4	Diversifying, modernizing and improving the quality of rural destinations, products and services
5	Improving policies, legislation and regulation of the rural tourism sector and enforcing laws across the value chain
6	Improving information data collection and management to support sound planning
7	Developing the culture of rural tourism among the young generation and in the education system
8	Improving domestic and international linkages and networking

**Source:** Lebanon Ministry of Tourism, (2015), Lebanon Rural Tourism Strategy, pp. 29-47. Available at <http://www.databank.com.lb/docs/Rural%20Tourism%20Strategy-MoT-2015.pdf>.

The strategy was developed within the Lebanon Industry Value Chain Development (LIVCD) project supported by the United States Agency for International Development (USAID), under the component of "cooperation and common action in rural tourism". Local communities and municipalities have also been key stakeholders in rural tourism, mostly through LIVCD funding, and many initiatives have been implemented at the municipal level.

### 4. National water sector strategy

The Ministry of Energy and Water issued a national water sector strategy that was endorsed by the Lebanese Government in 2012.

The strategy includes an assessment of the water resources baseline and infrastructure, a forecast of the supply and demand, the management and enabling environment, a detailed strategic roadmap for improving water provision and management, and an investment plan. The expected projects include artificial ground water recharge and dams to increase storage capacity, enhancing the water network and wastewater network and treatment, reforming laws and improving the management environment of the sector.<sup>17</sup>

Whereas the strategy does not specifically target rural areas, it tackles the water demand in agriculture, irrigation needs and wastewater treatment and reuse, and the adoption of lower consumption crops. The strategy also tackles the irrigation infrastructure forecasts

covering restoration and expansion around several river basins to enhance irrigation in agriculture lands, mainly in Bekaa and the north and south of Lebanon.<sup>18</sup> It is worth noting that 61 per cent of total water consumption in Lebanon is dedicated to irrigation.<sup>19</sup>

Several autonomous water establishments are supposed to be in charge of service provision. These include four regional water establishments (Beirut, Mount Lebanon, Bekaa, north and south Lebanon, and the Litani River Authority (LRA)). The LRA was established in 1954 as an autonomous public institution under the authority of Ministry of Energy and Water. According to the authority's website, the LRA mandate includes ensuring water monitoring for all rivers, studying the blueprint of the agriculture water plan for the South of Lebanon, and studying the locations of dams.

Other government institutions play a primary role in the sector governance and management, including the Ministries of Agriculture, Public Health, Environment, Finance, Industry and Interior, as well as municipalities and the Council for Development and Reconstruction (CDR).<sup>20</sup>

It should be mentioned that the National Water Sector Strategy is currently being updated with more specific implementation plans. Furthermore, the Water Code was passed in Parliament in 2018 under Law 77, but is also currently undergoing a revision. This Water Code, although not specifically targeting rural development, still addresses water rights and water user associations that are mainly concentrated in rural areas and associated with rural development.

### 5. Electricity strategies and actions plans

The Lebanese Parliament has endorsed two electricity policy papers in 2010 and 2019 aiming for a national solution to the electricity supply shortage and losses and to the fiscal deficit of the state-owned utility, Electricité du Liban (EDL), in a centralized approach, with a focus on thermal generation in urban areas on the coastal side. EDL operates 90 per cent of the formal electricity sector, with other participants being the LRA, which is also allowed to implement electrical substations and distribution lines in all the Lebanese regions, as well as some other distribution concessions.

The 2019 electricity policy paper, an update of the 2010 paper, lays out three objectives: (a) to reduce the technical and non-technical losses; (b) to increase the power generation capacity and switch fuel use from heavy fuel oil and diesel oil to natural gas; and (c) to raise the electricity tariff.<sup>21</sup>

The Government has played a key role in promoting distributed renewable energy.<sup>22</sup> Whereas the electrical policy papers and

targets do not include any local or regional segregation, energy conservation and renewable energy have a more distributed approach, despite the lack of focus on rural development, with three national policies: the first is the National Energy Efficiency Action Plan (NEEAP), adopted in 2010 for the period of 2011-2015; the second issued in 2016 for the 2016-2020 period that builds on the initiatives and the lessons learnt of the first NEEAP; and the National Renewable Energy Action Plan (NREAP) issued in 2016, all of which include the development of regional and local projects.

It is worth noting, however, that the first utility-scale wind farms in Lebanon will be built in the Governorate of Akkar, in North Lebanon, which is one of the country's most rural governorates. In addition, the majority of the country's first utility-scale solar photovoltaic (PV) farms will also be built throughout the rural areas. These energy infrastructure development projects will directly contribute to rural development through job creation, increased economic activity and the creation of new value chains needed to sustain the farm operations.

### 6. National Women Strategy

The main mission of the NCLW is to ensure gender mainstreaming in public institutions by implementing the necessary strategies and measures.<sup>23</sup> The Commission has developed the National Strategy for Women in Lebanon for the period 2011-2020 and the National Action Plan comprising measures for the different sectors, including health care, education and the economy. A key strategic goal is to encourage women's participation in the economic sector by clearing all the laws regulating women's engagement in the workforce from all sorts of discrimination, and by including women workers as part of the agricultural sector in the labour law.

## C. Identification of shortcomings in current national strategies

In the absence of a complete framework, it has become difficult to develop inclusive national strategies that integrate the rural component and issue coherent rural productive policies.

The various strategies are therefore fragmented and mostly do not account for the rural context. They are also constrained by the lack of an inclusive framework, coordination mechanisms, access to information and data sharing between the stakeholders that would

enable evidence-based policies. The major shortcomings are the lack of measurable indicators for follow-up, absence of financing mechanisms and lack of an integrated approach to a sustainable development, including climate change mitigation and natural resources management. There is also an absence of clear indicators for equal access of women to resources and opportunities.

### 1. Agriculture strategy

The domestic political instability and the Syrian crisis have created significant barriers in the implementation of the agriculture strategy.<sup>24</sup> The low ability to build technical capacity, mobilize funding and commit necessary financial resources has also added to these barriers.<sup>25</sup>

Despite the many challenges, the agriculture strategy has produced some sectorial improvements, including a small increase in the budget of the Ministry of Agriculture, financial support to small farmers through the *Kafalat* programme, the development of cooperatives and the promotion of women cooperatives.<sup>26</sup> Food security is threatened by climate change, and the agriculture sector is constrained by energy, water resources and land availability. Climate change is gaining more traction in the latest 2020 agriculture strategy compared to previous strategies. Yet, the risk that the implementation could lag behind remains high. The strategy lacks the integration of climate change adaptation and mitigation, water scarcity and energy availability and affordability. While the strategy lays the challenges of the sector and strategic objectives to mitigate them, along with general indicators and stakeholders in charge of verifying them, it lacks specific action plans to reach the targets, to attract financing and to cover initiatives to improve the sector's efficiency and productivity. Additionally, a framework for follow-up, monitoring and evaluation of the targets is missing. There is currently a dominance of low value crops, low productivity and low technology adoption, all of which remain largely untreated.

The agriculture strategy highlights the challenges of climate change in terms of desertification and land degradation and aims to promote sustainable agriculture. However, adaptation technology options are not developed, as the strategy focuses at that stage on research and assessment in order to prepare a guide on response and future adaptation measures.

Furthermore, energy and water are intended as pilot initiatives to increase water security. Thus, technological advancements are listed in terms of pilot projects, such as 28 demonstration projects for renewable energy in irrigation, instead of core focus. This is mostly portrayed in the course of action II, "increase productivity

and competitiveness of the Lebanese agricultural products", which should open the window for alternative energy and water technology usage and innovation and collaboration to improve the value chain, yet does not include action plans and key performance indicators. Alternative energy is considered for irrigation purposes only, clearly portrayed in the course of action III, "improve the good governance and sustainable use of natural resources", which highlights renewable energy usage for water resources governance optimization. The socioeconomic benefits of renewable energy across the value chain are overlooked.

Women inclusion is accounted for through the provision of soft loans and the preparation and dissemination of feasibility studies of select projects to be proposed for youth and women. Yet, a framework for their engagement, retention and increase of their income in the sector is absent. The strategy does not include policies, whether on the national or local level, to support or organize the cooperatives work, despite the large number of cooperatives and their crucial role in the sector, especially their role in engaging women, mostly in the agro-food industry.

Beyond that, the implementation of the strategy is hindered by the weak competitiveness on the market and low capacity to market and sell the farmers produce on the local and international levels, with high dominance of imports. Lebanon exported \$0.18 billion worth of food in 2017, up from \$0.13 billion in 2007, while the food imports were estimated at \$1.48 billion.<sup>27</sup>

In general, the development of the sector has suffered from regional disparities and lack of uniform implementation.<sup>28</sup>

### 2. Rural tourism strategy

Rural tourism comprises a wide set of touristic activities such as ecotourism, cultural tourism, agro-food tourism and cultural heritage tourism. Therefore, natural resources and agriculture cannot be secluded, but they are largely overlooked in the strategy.

The tourism sector lacks resilience, as it is highly impacted by the domestic and regional political and security events. However, enhanced competitiveness of services and products would improve the sector's prospects.

The role of energy, including renewable energy technologies, in ensuring reliable supply and impacting operating costs in the sector is overlooked.

The involvement of women lacks an implementation strategy. The strategy notes women's ability to provide food, produce crafts and

host visitors, and aims to conduct capacity building for women, among other stakeholders, without a specific action plan or overview of the needed training topics and materials.

### **3. National water sector strategy**

The strategy implementation has been fragmented and suffers from deficiencies in collaboration between the Ministry of Energy and Water, which has a full authority on the water sector on the national level, and the Council for Development and Reconstruction and the regional water establishments. The high water consumption of the agriculture sector requires close coordination with the Ministry of Agriculture, which is not yet achieved.

The chronic lack of investment, a common barrier across sectors, has also hampered the implementation. Whereas the strategy aimed to tackle the management challenges (Ministry of Energy and Water, 2012b, p. 58), its lack of implementation resulted in chronic low authority of the water establishments and continued shortages in technical manpower and financial losses, along with an overlap of functions and responsibilities. This low capacity of the regional water establishments is leading some water committees to manage water resources, although their mandates are restricted to wastewater collection and irrigation mediums, similarly to the authority of the municipalities in the sector.<sup>29</sup>

Among this fragmentation, the central government is therefore facing challenges in identifying the number and location of all the water wells, and whether water is polluted and over-pumped. Moreover, the efficient use and water conservation mechanism remain largely untapped due to the lack of awareness raising and planning.<sup>30</sup>

The sector is further aggravated by the absence of a regulatory authority governing the resource and ensuring proper policy implementation and follow-up. There is also an overlap of functions, especially on the policy level, as no specific institution is officially mandated to issue the sector's policies, and different institutions have the authority to draft policies and recommendations.<sup>31</sup>

### **4. Electricity strategies and action plans**

The electricity policy papers have so far failed to materialize, maintaining non-uniform electricity access across the Lebanese territories, with the longest periods of blackouts being in rural areas. The chronic lack of investment in the grid infrastructure, including transmission and distribution networks, is resulting in low electricity voltages and low-quality electricity, in addition to the low supply hours.<sup>32</sup> This is limiting the use of many appliances and machinery, leading to an increased reliance on

expensive and polluting private diesel generators, especially in productive activities.

The NEEAP and the NREAP have had low implementation levels. The major shortcomings of the first NEEAP was that initiatives had qualitative targets without measures to be evaluated, and targets for energy efficiency and renewable energy were combined, which has led to their separation into the second NEEAP and the NREAP.<sup>33</sup> The implementation of the utility-scale renewable energy projects, comprised mainly of wind and solar photovoltaic farms, has been subject to lengthy delays, with the first wind farms power purchase agreements signed in 2018, and failing to yet materialize by the end of 2020. The same applies to the solar photovoltaic farms power purchase agreements, which are yet to be signed. The delays in implementation have postponed the expected positive impact on job creation and economic opportunities in rural areas, where most of the farms will be located.

### **5. National women strategy**

Since the strategy has been contingent on clearing laws of all sorts of discrimination and ensuring gender mainstreaming in public institutions, its implementation has been lagging behind, despite some progress. The drafting of amendments to laws has been made, yet the sociocultural norms and religious considerations have presented significant barriers to the adoption of the amendments.<sup>34</sup> Therefore, discrimination still prevails. The details on these laws and their status are listed in section V.

Moreover, although the NCLW has trained gender auditors to audit the various public institutions and place women in the core activities,<sup>35</sup> political instability and lack of institutional coordination have prevented achieving this target.

## **D. Institutional and legal frameworks**

Rural development is undermined by the absence of a dedicated institutional capacity and the lack of a consolidated policy and regulatory framework.

### **1. Institutional framework**

The sustainable development of rural areas is dependent on strong institutions and close coordination between the stakeholders. However, according to the Office of the Minister of State for Administrative Reform (OMSAR), Lebanese public institutions face

administrative challenges, including fragmentation, excessive centralized administration that narrows the role of the local institutions, inadequate organizational structures and weak planning methodologies.<sup>36</sup> These institutional challenges are reducing the capacity of public institutions, and the different ministries address the same issues through overlapping projects.<sup>37</sup>

The establishment of a ministerial committee for rural development in 2020, and the appointment of the Ministry of Displaced as the leading institution with prospects of transforming it into the ministry of rural development, mark the first official step to institutionalize rural development. However, the Ministry of Energy and Water, which leads key factors in rural development such as electricity, renewable energy and water sectors, along with the Ministries of Environment and Public Works and Transport, are not part of the committee. Before establishing this rural development initiative, and considering the historic role of agriculture in the rural economy, the Ministry of Agriculture had been the most linked to rural development. Restricting it to the Ministry of Agriculture has heightened the risk that rural development would be perceived as the development and expansion of the agricultural sector only. Nonetheless, roles and functions overlap across institutions. Whereas the agriculture and food security portfolios are under the mandate of the Ministry of Agriculture, the latter is not involved in imports as a source of food or exports as a source of rural income, as these fall within the mandate of the Ministry of Economy and Trade. The Ministry of Tourism is the custodian of the rural tourism strategy, whose implementation is contingent on the support of the municipalities. The latter, however, fall under the mandate of the Ministry of Interior and Municipalities, and the municipal fund is within the Ministry of Finance, which is in charge of all the budgets and expenses. The Ministry of Industry oversees all industries, many of which are located in rural areas, without a specific rural approach. The Ministry of Environment is mandated to protect the environment and hosts the climate change portfolio, whereas renewable energy, a key component of climate change mitigation and rural development, is hosted within the Ministry of Energy and Water. The water sector, including irrigation, is under the authority of the Ministry of Energy and Water, LRA and regional water establishments, with limited collaboration with the Ministry of Agriculture. Land use, directly impacting agriculture, is within the National Master Plan of the Lebanese Territory of the CDR, which has also been implementing major infrastructure projects.

Collaboration between the various ministries is ongoing, although non-consistent and does not fall within a strategic framework. The fragmentation on the institutional level has yielded a fragmentation in data collection, and the lack of data has limited the ability to adopt evidence-based policies and optimize implementation.

In light of the political instability and the challenges facing institutions, international organizations and non-governmental organizations have played a role in assisting Lebanon in conducting the necessary assessments, adopting policies and deploying projects in rural areas. Among these stakeholders, cooperatives have been instrumental in improving the livelihoods and the economic conditions of the rural population. Growth in productive activities has been achieved where cooperatives are active and strong.<sup>38</sup> The cooperatives sector was established through Decree No. 17199 and its amendments, the latest being in 1983. They receive permits to operate through the Directorate General of Cooperatives, which is run by the office of the Minister of Agriculture that is tasked to supervise, monitor and assist in financing the cooperatives. However, the directorate suffers from low financial and manpower resources.<sup>39</sup>

Cooperatives are represented by the Lebanese Federation of Cooperatives (LFC), established through Decree No. 10659 of 1968. The membership in the LFC is mandatory for registered cooperatives, and its role includes the promotion of cooperatives and capacity building. The Federation also faces the challenge of lack of financial capacity, which is restricting its role. Cooperatives can be members of the National Union for Cooperative Credit, established in 1968 to regulate credit disbursement to cooperatives. Its membership, however, has been frozen due to financial problems linked to the 1980s' devaluation of the currency during the Lebanese civil war, and therefore, only has 206 members, of which only 23 remain active,<sup>40</sup> out of a total of 1,238 cooperatives registered in 2017. Only 10 per cent of all registered cooperatives are led by women.

Although some cooperatives have succeeded in minding the policy gap, especially in the agriculture sector where half of all the registered cooperatives operate, the financial and institutional challenges result in a weak overall cooperative environment and a dominant fragmented character.<sup>41</sup>

The role of local governance, such as municipalities, is critical for local development. However, most municipalities in rural areas are weak and face financing issues. Their limited capacity to serve local communities was further exacerbated by the financial and economic crises. The disbursement of municipal funds under the municipal act established under Law 118 dated 30 June 1977, and its amendments, has been subject to chronic delays. Moreover, the legal mandates of municipalities restrict their ability to implement some projects, particularly in infrastructure.<sup>42</sup>

There are also a number of other primary and secondary stakeholders in rural development. The key stakeholders are mapped in table 4. The mapping shows the linkages and roles of the various institutions and organizations in rural development.

## Ministries

**Table 4. Stakeholder Mapping**

Ministry	Role	Establishment laws and decrees
Ministry of Agriculture	Responsible for the agriculture policy.	Established under Decree No. 31 dated 18 January 1955 Food Safety Law No. 35 of 2016
Ministry of Displaced	Leads the technical committee on rural development as of 2020 and aims to develop a corresponding strategy and transform itself into the ministry of rural development.	Established under Law No. 190 issued on 4 January 1993
Ministry of Economy and Trade	Cooperates with other concerned ministries to develop the national wealth, supports small and medium enterprises (SMEs) and takes the necessary actions to enhance trade.	Established in 1943
Ministry of Energy and Water	In charge of the water, electricity, including renewable energy, oil installations, minerals and mines sectors.	Water Law No. 77 of 2018 Regulation of the electricity sector Law No. 462 of 2002
Ministry of Environment	Tasked to protect the environment, determine the environmental conditions for zoning classification and land use, and develop climate change adaptation and mitigation measures.	Law No. 216 of 1993 (amended by Law 690 of 2005) Environment Protection Law No. 444 of 2002
Ministry of Finance	Collects taxes and fees under the independent municipal fund established by the state on behalf of the municipalities. The Ministry also provides credit interest rates to the agricultural sectors through the Central Bank.	Distribution of revenues of the independent municipal fund – Decree No. 1917 of 1979
Ministry of Industry	Organizes the existing industrial zones and is constructing new and sustainable industrial zones, including in rural areas.	Established under Law No. 642 issued on 2 June 1997 and its amendments
Ministry of Interior and Municipalities	Oversight authority over the municipalities, including their elections, finances and training and capacity building. Distributes the independent municipal fund.	Established in 1943. Latest governing Decree No. 4082 dated 4 October 2000 Municipal Act Decree-Law No. 118 dated 30 June 1977 and its amendments
Ministry of Labour	Responsible for labour and employment matters.	Currently governed by Decree No. 8352 dated 30 December 1961 and its amendments
Ministry of Public Health	Covers primary care and contributes to food and water safety.	Food Safety Law No. 35 of 2016
Ministry of Social Affairs	In charge of basic welfare and social development, including within rural areas. Operates the National Poverty Targeting Programme targeting the vulnerable population.	Established through Law No. 212 dated 2 April 1993
Office of the Minister of State for Administrative Reform	Tasked with developing the institutional and technical capacities of the Lebanese ministries, central bodies and public agencies; includes gender mainstreaming mandates.	Established in 1994
Ministry of Tourism	Tasked to promote tourism, regulate, monitor and coordinate the profession, private companies and associations, as well as execute tourism investment projects.	Established under Law No. 21 dated 29 March 1966



## Public institutions

Institution	Role	Establishment laws and decrees
Central Administration for Statistics	Public administration within the Presidency of the Council of Ministers. Tasked to collect, process, produce and disseminate social and economic statistics at the national level.	Governed by Law No. 1793/79
Council for Development and Reconstruction	Autonomous public institution under the supervision of the Council of Ministers. The institution has implemented major infrastructure, development and post-war reconstruction projects within the water, electricity, agriculture and transport sectors.	Established through Decree No. 5 dated 31 January 1977
Directorate General of Cooperatives	Run by the office of the Minister of Agriculture, and is tasked to grant licenses and supervise, monitor and assist in financing the cooperatives.	
Electricité du Liban	Public establishment with an industrial and commercial vocation. The institution is responsible for the generation, transmission and distribution of electricity in Lebanon and controls 90 per cent of the sector. Other participants include hydroelectric power plants owned by the Litani River Authority and concessions.	Established through Decree No. 16878 dated 10 July 1964
Lebanese Agriculture Research Institute	Autonomous public institute under the supervision of the Minister of Agriculture. The Institute conducts research for the development and advancement of the agricultural sector. It has eight experimental stations.	Established in 1964
Litani River Authority	Its mandates include ensuring water monitoring for all rivers, studying the blueprint of the agriculture water plan for the South of Lebanon and studying the locations of dams. The Authority is also allowed to implement electrical substations and distribution lines in all of the Lebanese regions.	Established under a law dated 14 August 1954 and amended on 10 December 1955
National Commission for Lebanese Women	Tasked to ensure gender mainstreaming in public institutions through the implementation of necessary strategies and measures.	Governed by Law No. 720 of 1998
The Economic and Social Fund for Development	Semi-autonomous governmental entity for poverty alleviation, reporting to the Council for Development and Reconstruction.	Established in 2002
The Green Plan	Independent public institution reporting to the Council of Ministers. The institution can implement irrigation projects, agricultural roads and rainwater reservoirs.	Established in 1963

## Non-governmental organizations/associations

Organization/association	Role and involvement
Berytech	Founded in 2002. Aims to provide a dynamic ecosystem for the creation and development of Lebanese start-ups and to foster innovation, technology and entrepreneurship.
Caritas Lebanon	Established in 1972 as Caritas South of Lebanon, it became Caritas Lebanon in 1976. Promotes an environmentally sustainable economically inclusive developed world in which all people lead peaceful, just and dignified lives.
Chambers of Commerce, Industry and Agriculture	Established through Ministerial Decree No. 36/67 enacted in 1967, Decree No. 9656 issued in 1996 and Law No. 626 of 1997. Four regional chambers tasked to represent the interests of the private economy and contribute to the formulation of economic policies and to the elaboration of legislation that impacts business activity.
Environment and Sustainable Development Unit – American University of Beirut	Established in 2001. An inter-disciplinary research and development centre specializes in community development and sustainable agriculture.
Lebanese Association for Rural Development	Established in 2007. Promotes environmental and human sustainable development through the mobilization and participation of the local communities.
Lebanese Center for Energy Conservation	Created in 2002 and registered in 2011. Sets renewable energy and energy efficiency national strategies and action plans to be adopted by the Lebanese Government.
Lebanese Federation of Cooperatives	Established through Decree No. 10659 of 1968. Membership in the Federation is mandatory for registered cooperatives, and its role includes the promotion of cooperatives and capacity building.
Lebanese Foundation for Renewable Energy	Founded in 2019. Promotes the Lebanese renewable energy leapfrog and transition into a sustainable green energy revolution.
Lebanese Solar Energy Society	Established in 1980. Promotes renewable energy and capacity building in Lebanon.
MADA Association	Registered in 2000. Aims to reinforce the relationship between local communities and their natural environment to meet the local communities needs.
National Union for Cooperative Credit	Established in 1968 to regulate credit disbursement to cooperatives.
René Moawad Foundation	Created in 1991. Promotes social, economic and rural development and contributes to building a responsible civil society.

## International organizations

Organization	Role and involvement
Embassy of the Netherlands	Supports renewable energy deployment and rural development.
European Union	Supports economic reforms and sustainable development, including renewable energy and agriculture, especially through the Agriculture and Rural Development Programme (ARDP) project.
Swedish International Development Cooperation Agency	With a mission to reduce poverty, SIDA provides Lebanon with humanitarian support and rural development, in addition to the REGEND project implemented by ESCWA.

United States Agency for International Development	Assistance in Lebanon includes increased access to education, improved water and wastewater services and good governance, particularly in poor, underserved areas. Supported the rural tourism strategy through the Lebanon Industry Value Chain Development (LIVCD) project.
United Nations	Lebanon is a founding member of the United Nations and includes a number of its organizations operating across sectors, including socioeconomic development, energy and agriculture. FAO assists in Lebanon by supporting cooperatives, food security, transboundary animal diseases control, restoration of animal production, climate smart agriculture and natural resource management.
World Bank	Works closely with the Government on economic reforms, sustainable energy and women's empowerment, among other sectors.

**Source:** Author and corresponding websites.

## 2. Legal framework

The overlapping agencies operate as per their respective mandates and regulations. Several regulations apply to the rural context but are fragmented and face implementation challenges.

There is no agriculture framework law. However, Lebanon has endorsed a food safety law. Issued in 2016 in consistency with the agriculture strategy, the law sets safety requirements for farms, food transport and display. The implementation of the law should fall under the auspices of the Food Safety Lebanese Commission whose members are yet to be appointed, thereby leaving the law unenforceable. As a result, Lebanon under-invests in food safety compared to European countries, creating an export barrier to the local food industry.<sup>43</sup>

The environment protection law was issued in 2002. In addition to the law, Lebanon has ratified several international environmental and natural resources conventions. However, enforcing the legislation is lagging behind. The socioeconomic and political issues have taken priority over the implementation of environmental laws and goals.<sup>44</sup>

The principles of land use fall within the National Master Plan of the Lebanese Territory. The Plan provides general guidelines and requires specific policies and regulations to enable the implementation.<sup>45</sup> This, in addition to lack of funding, has thwarted the plan. Currently, municipalities have the authority to allocate land use through Decree No. 275 related to land not intended for public use and which can belong to the State through the Ministry of Finance or the municipalities.<sup>46</sup> The Decree, however, indicates that agricultural lands may only be leased for agricultural use, and farmers who wish to sublease their lands require the approval of the relevant institution.<sup>47</sup>

The set of laws and decrees governing the water sector are: Law 320 of 1926; Decree No. 227 of 1943; Legislative Decree No. 31 of 1955; Decree No. 15886 of 1964; Decree No. 14438 of 1970; Decree No. 108 of 1983; Law 221 of 2000; Decision 8/1 of 2001; Law 444 of 2002; Decree No. 8122 of 2002; Law 210 of 2012; and Law 78 of 2018.<sup>48</sup> An updated water code was approved by the Parliament in 2018 and aims to govern the water resources. The decrees for the implementation of the law were not approved, and therefore the law has not been enforced and is currently under revision in the Parliament.

The electricity legal framework is based on outdated standards and codes.<sup>49</sup> The electricity regulation Law 462, adopted in 2002 to govern the sector, entails the formation of an electricity regulatory authority and the restructuring of the national electricity utility (EDL). The law, which has not been implemented due to the fact that it needed implementing decrees, have not been issued, and it requires an introduction of licensing schemes for technologies listed in the NREAP.<sup>50</sup>

So far, the generation, transmission and distribution of electricity are solely mandated to EDL.

Lebanon is a signatory of the 2016 Paris Agreement, which was ratified under Law 115 dated 29 March 2019, followed by Decree No. 5599 dated 11 September 2019. The ratification was deposited at the United Nations in February 2020.<sup>51</sup>

The air quality law, adopted in 2018, falls within the climate change framework and aims to set emissions standards and penalties.<sup>52</sup> It is not yet in implementation. To account for climate change mitigation, some draft laws are currently in process, including the energy efficiency law and the distributed renewable energy generation legislation.

Achieving sustainable development, especially in rural areas, requires decentralization enabling local governance to meet the needs of the local community. Yet, attempts to adopt a legal framework for decentralization have not been successful.<sup>53</sup> Many administrative decentralization proposals have been drafted, with some mandating an advisory role to the local governance at the Caza level, while others providing local governance with full financial and administrative autonomy. The latest proposal dates back to 2014 and comprises 147 articles. The drafting committee conducted 47 sessions relying on the “Administrative Decentralization in 100 Questions” book published by the Ministry of Interior and Municipalities in 2011. The draft law adopts the Caza as a financially and administratively independent unit managed by an elected council which in turn elects an executive council and replaces the Independent Municipal Fund with a decentralized fund subject to the court of audit. The draft also entails the establishment of a ministry of local administration to oversee local administrations, including municipalities, and includes a 30 per cent gender quota in Caza council elections.<sup>54</sup>

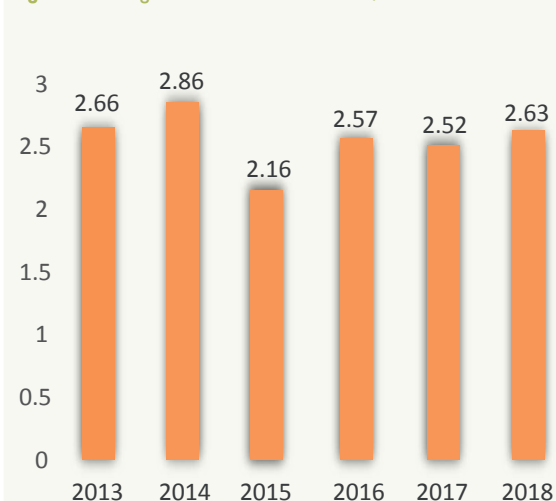
Additionally, the draft law aims to promote accountability of elected officials and transparency, as data and decisions must be made publicly available.<sup>55</sup>

## E. Prospects of attracting investments

The political and economic uncertainties and the lack of policy consistency and comprehensive sector strategies on the national and local levels negatively impact the ability to attract investments.

Lebanon attracts more remittances and aid than foreign direct investments (FDI), yet figures for the inflows of aid are unavailable. FDI has averaged \$2.6 billion per year between 2013 and 2018, with the lowest being \$2.16 billion in 2015 (figure 1).

Figure 1. Foreign direct investments in \$ billion in Lebanon



Source: IDAL, (2019) Foreign Direct Investments data. Available at [https://investinlebanon.gov.lb/en/lebanon\\_at\\_a\\_glance/foreign\\_direct\\_investments/fdi\\_data](https://investinlebanon.gov.lb/en/lebanon_at_a_glance/foreign_direct_investments/fdi_data).

The weak business investment climate that obstructs infrastructure projects across the country takes a harder hit on the rural areas.

Yet, financial and non-financial initiatives are provided by the Central Bank of Lebanon, Banque du Liban (BDL), the Investment Development Authority of Lebanon (IDAL), and *Kafalat* for many sectors. Although these incentives do not necessarily target the rural population, they do include rural activities.

Prior to the economic crisis, the BDL offered subsidized loans to promote productive industries such as agro-food industries. The state-owned guarantee institution *Kafalat* provided financial guarantees supporting loans reaching up to \$400,000 to SMEs in the sector.<sup>56</sup> Microfinance institutions and bank finance mechanisms provide small financing and collateral guarantee funds, such as *Kafalat*, for micro-SMEs (MSMEs) and informal businesses. Microcredit has been vital for economic growth and employment opportunities, including in rural areas, and several finance institutions have been supporting micro-businesses. In 2015, the Lebanese Micro-Finance Association was established to represent nine active members and increase access to finance. The members are:

**Table 5. Lebanese Micro-Finance Association members**

Al Majmoua	Non-profit microfinance institution that focuses on supporting micro-entrepreneurs, particularly women, to develop sustainable businesses all over Lebanon.
Makhzoumi Foundation	NGO operating a microcredit programme to provide financial services to those who cannot get financing from the banks.
Association D'Entraide Professionnelle	Non-profit association aiming for socioeconomic development in microfinance.
Entrepreneurial Development Foundation	Non-profit organization promoting entrepreneurship among the less privileged in the Lebanese rural areas through loan-provision.
Emkan Finance	Financial institution licensed by the Central Bank of Lebanon that reaches the unbanked segment of the population.
Lebanese Development Cooperative	Organization encouraging Lebanese in rural areas to remain in their areas and runs micro funding programmes for rural businesses.
Association for the Development of Rural Capacities	Association providing microcredit and vocational training to support the marginalized communities.
Vitas	Lebanese-based for-profit holding company that operates a network of microfinance companies in the Middle East, including in the rural areas of Lebanon.
Ibdaa	Non-banking financial institution aiming to empower low-income people in Lebanon, especially youth, women and small entrepreneurs.

**Source:** Authors, based on consultation and corresponding websites.

The country's financial and economic crises create more demand for microcredit, but frameworks should be in place and awareness on the financing packages should be raised.

Through IDAL, other financial incentives are provided for several productive activities and can benefit the rural population, although they do not necessarily aim for the rural context. These incentives include the manufacturing, tourism and agriculture sectors.<sup>57</sup>

The incentives for each sector are as follows:

### 1. The manufacturing sector, including agro-food

- Imports of raw materials and equipment for setting up a new industrial firm are subject to a reduced customs fee of 2 per cent.
- Manufacturing companies benefit from a 50 per cent exemption of export fees.
- In select urban areas, manufacturing companies benefit from a corporate income tax exemption for a 10-year period.

### 2. The agriculture sector

- Farmers are exempted from income tax.
- Agriculture products are exempted from the value added

tax. Imports of raw materials and equipment are subject to a reduced custom fee of 2 per cent.

- IDAL provides incentives for agriculture projects per three zone classifications requiring investments of \$500,000, \$1 million, and \$1.5 million, which entail 50 to 100 per cent reduction on corporate income tax and project dividends for certain number of years, as well as work permits.<sup>58</sup>
- Other IDAL incentives include a package for investments of a minimum of \$2 million and employing a minimum of 50 people.

### 3. The tourism sector

- Imports of hotel equipment that have at least a 10-year operating period are exempted from certain duties.
- Artisanal touristic establishments are exempted from income tax.

Considering the fragmented nature of agricultural lands and farmers, and the dominant small size of manufacturers and touristic facilities in rural areas, a large share of potential beneficiaries is left out. In general, the rural population lacks the awareness on these programmes, incentives and financing mechanisms, as well as the capacity to undergo the application process.

Whereas financing challenges remain high, grants by donors have enabled the execution of policies and rural development projects and provided support to rural businesses. These grants have been provided through funding from agencies and embassies, including SIDA, the Norwegian Embassy, the European Union, the Dutch Embassy, the International Fund for Agricultural Development, USAID and the Canadian Embassy, among others.

Cooperatives are exempted from taxation, which should encourage the rural population to create cooperatives. However, the opposite trend is being witnessed as there is a reduction in membership in cooperatives and many cooperatives are inactive. Those that are active represent 33 per cent of all registered cooperatives, and their capabilities differ from one to another.<sup>59</sup>

On the municipal level, the weak financial standing of most rural municipalities and the lack of consistency of authority with the periodic municipal changes reduce the local authorities' ability to tap into external funds and loans, or attract long-term private investments. Thus, the common municipal financial mechanisms are the allocated state budgets, which are subject to delays and do not meet the development needs of rural areas, in addition to the grants from foreign donors and NGOs. The economic crisis, combined with a refugee crisis, have resulted in the inability of many municipalities to afford basic services, such as waste collection fees, driven by increased population and collection rates and reduced financial capacity.

The weak governance in funds allocation and the stress on donor funds have added challenges to the sustainable development of rural areas and led to regional disparities, even among the vulnerable areas.<sup>60</sup> Creating an export-enabling environment provides foreign currency financing for the rural population, countering the effect of the local currency devaluation. Trade barriers, however, include the rules of origin and requirements of some trade agreements, including the EU-Lebanon Free Trade Agreement, the high use of fertilizers in agriculture produce, and the lack of capacity building and fragmentation of the farmers.

Several NGOs have been working to counter this, such as the René Moawad Foundation that has been active in strengthening exports of fruits and vegetables. This has been done through collaboration with 2,760 farmers and with the support of the Dutch Embassy in the first stage of the project, and the Embassy of the Netherlands in the second phase, resulting in the export of a total of 81.7 tons of Lebanese potatoes to the European market in 2018 and 2020, a major milestone in Lebanese agriculture trade.<sup>61</sup>

A window of opportunity to attract private investments is found in renewable energy. The inability to access reliable energy in rural areas is attracting financing related to renewable energy implementation. Several renewable energy projects, mainly on-grid solar photovoltaic with batteries, hybrid solar photovoltaic-diesel projects and solar photovoltaic pumps, have been implemented in agriculture areas, farmer markets, schools, municipalities, health clinics and community centres in rural areas through UNDP, ESCWA, MedSolar, the René Moawad Foundation, Oxfam and other organizations.<sup>62</sup>

Currently, the World Bank is financing the design of a Green Investment Facility that will be established by the Ministry of Environment with mandates aligned to the country's Nationally Determined Contributions. The facility will provide investments in green technologies in various sectors, including energy and agriculture. Lebanon is also looking to tap into international funds, such as the Subnational Climate Fund, for direct equity investment.

De-risking renewable energy investment policies will be necessary to scale up private sector investments in renewables. Key necessary de-risking measures include establishing a regulatory framework and an independent electricity regulator to reduce the power market risk, setting up a one-stop-shop for renewable energy permits to minimize the permits premium, strengthening the grid infrastructure and EDL's grid management capacity, then minimizing the grid and counterparty risk, in addition to addressing the political and macroeconomic risks.<sup>63</sup>



# 02 The role of small-scale renewable energy in rural development

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# 02 The role of small-scale renewable energy in rural development

## A. Assessing the potential for small-scale renewable energy technologies in rural development

Small-scale renewable energy systems create a series of opportunities. These systems provide affordable and reliable electricity supply and develop rural areas through lowering electricity costs and enabling job creation and technological adoption. They also enhance energy security in these areas, which are typically the first and the most to be impacted when a conflict arises.<sup>64</sup>

Lebanon has abundant renewable energy resources that can remedy the chronic woes of electricity supply negatively impacting the rural areas. The electricity sector suffers from a chronic supply shortage and uneven distribution, which is exacerbated in rural areas and negatively impacting businesses. In fact, 95 per cent of businesses in Lebanon reported electricity outages in 2013,<sup>65</sup> and whereas data is not available, it is expected that the situation of rural businesses is even worse. Yet, Lebanon has approximately 300 sunny days annually, with an average insolation of 2,100 kWh/m<sup>2</sup>. Wind also has high potential, with

the northern region showing the highest economically viable wind potential with wind speeds ranging from 6.5 to 9.5 m/s at 80 metres above ground level. The use of crops for bioenergy is highly promising for rural areas as well.<sup>66</sup>

The fossil fuel-based thermal plants are located on the coastal line and are source to 91.9 per cent of power generation.<sup>67</sup> However, the fast pace of solar systems adoption for electricity generation and thermal water heating in countries such as Lebanon highlights the large technological potential of renewable energy.<sup>68</sup>

In times of worsening economic crisis, a major benefit of small-scale renewable energy is enhancing the rural economy. The implementation of renewable energy applications for rural productive activities increases the competitiveness of MSMEs by reducing their operating and production costs where expenditures on energy constitute a significant proportion of total costs. This leads to growth in profits that translates into new revenue streamlines, increased business and potential exports and more employment opportunities. Small-scale renewable energy also enhances human capital through reliable supply of electricity for health clinics and educational institutions.

Solar photovoltaic pumps for irrigation and water supply have been spreading in several countries in the region, including Lebanon.<sup>69</sup> Pumping water for irrigation and supply using off-grid solar PV



pumps eliminated the need to operate costly diesel generators, where grid electricity is not available, thereby resulting in savings. Other promising small-scale renewable energy applications are wind and solar photovoltaic (on-grid, off-grid, and hybrid with storage), and bioenergy.<sup>70</sup> In agro-food cooperatives and facilities, as well as guesthouses and handicrafts facilities, off-grid solar PV systems with storage or hybrid solar-diesel generator (when generator is available on-site) are easy to deploy and lead to major electricity bill savings. Solar photovoltaic systems and biogas co-digestion present the most suitable technologies for livestock and dairy farms.

Small-scale wind and hydro systems are another option, although they have more siting constraints than solar PV, mainly in terms of wind speeds. In terms of cost, although wind systems were cheaper than solar PV in the past, currently, wind is only cheaper in Class A sites.<sup>71</sup> Where hot water is needed, especially in agro-food facilities, cooperatives and guesthouses, solar water heaters are simple to install and maintain, affordable, and have high savings margins in energy consumption and associated bills.

The opportunities to reassess rural development through renewable energy integration are large. Rural areas could become industrial hubs and special economic zones, creating employment opportunities, attracting investments and enhancing the trade balance. Climate change adaptation and access to reliable, affordable and sustainable energy are vital aspects of rural development. In designing such zones, renewable energy can be integrated in the early stages. Sustainable energy is also vital for food security and water accessibility, the agro-food, tourism and other industries' competitiveness, as well as the preservation of nature and environment. Small-scale renewable energy is a recognized enabler of development.<sup>72</sup>

The dominant small and fragmented farmers and land are deemed less competitive than bigger farmers and agro-factories. In general, they lack technological advancements, efficient equipment and reliable and affordable electricity supply, which are important to produce at large volumes or to consider new lines of production. Instead, small farmers and cooperatives have to face one or a combination of the following challenges: (a) relying on diesel generators, which bills constitute a significant share of their revenues; (b) dealing with a weak grid and voltage that sometimes render the operation of equipment and machinery impossible; and (c) scheduling operations when the electricity utility is present since its subsidized rate is significantly lower than the generators average tariff.

So far, only farmers and agro-producers with large access to capital can invest in technological advances that provide continuous reliable electricity, giving them a clear advantage over small farmers. To remedy this, and like industrial and economic zones, agricultural and agro-food cooperatives can be concentrated in the same buildings, which allows for the sharing of a renewable energy system through innovative distributed models, significantly reducing the cooperatives' operating costs. Financing mechanisms should also account for farmers financial capacity.

Implementing an integrated development plan improves agriculture productivity in various ways. As Lebanon has limited agriculture land, improving productivity of the agriculture sector is critical to reaching some degree of self-sufficiency in food provision. The integration of sustainable energy, technology and water conservation leads to less reliance on groundwater, which falls within food security. The lack of reliable and sustainable access to energy has also been a barrier to technological improvements in water usage, resulting in wasteful and inefficient irrigation ways.

Multiple produce seasons can be achieved if renewable energy is accounted for. Growing seeds and crops in nurseries reduces the time these crops would otherwise need to grow in the soil and leads to an increased number of cultivation seasons. Yet, nurseries heating, cooling and lighting requirements, and excessive reliance on costly diesel generators, create a major barrier to mass deployment and the majority of farmer's access. The challenge is also there for the adoption of technological advancements, such as hydroponic systems, drone and automated systems that require reliable electricity access. Moreover, ensuring food safety and improving transportation of produce require large cooling storage rooms and equipment that have a high electricity demand.

Cheap land and rent in rural areas compared to urban areas present a competitive advantage for outsourcing and establishing back-offices for private firms. The enabling factors for such a shift in the perception of what rural areas have to offer and their development potential are energy and technology.

The competitiveness of tourism and manufacturers is reduced due to the same unreliable and expensive electricity issues, leading to higher operating costs. As eco-tourism and cultural tourism largely depend on nature and environmental conservation, the absence of sustainable rural development and adaptation to climate change risks reducing the potential of this sector.

Investing in clean technologies in rural areas mitigates the impact of climate change that will hit the rural population the hardest

by the expected soil degradation, water shortage and agriculture production retraction. Stabilizing the tourism revenues for the rural population depends on the ability to protect these natural resources and promote their optimal usage for water irrigation and energy generation.

Incentives to invest in renewable energy for rural tourism include the high operating costs incurred through the elevated water and electricity bills, and that are applicable to the different productive sectors, including handicrafts and livestock. These high operating costs that reduce the profit margin in the tourism sector, and increase costs for the tourist, reduce the latter's interest in domestic and rural tourism. As Lebanon works to overcome the twin shock of economic crisis and the impact of the pandemic, developing the rural areas and building a more inclusive economy become a necessity.

## B. Identification of socioenvironmental and financial impact on the national level

### 1. Socioenvironmental impact

Sustainable rural development is crucial for the national socioeconomic and environmental sustainability.<sup>73</sup> Aiming for the Sustainable Development Goals is a more pressing issue with the country's economic crisis and the urgent need for a more sustainable and developed nation. Yet, reaching the SDGs is contingent on incorporating targets and strategies for rural development.

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#### Box 1. Mobile solar PV system and shared containers for water irrigation

- Realizing the negative impact of the economic crisis, a group of farmers and engineers joined forces to promote their organic products and small farmers produce online, via Shihin Organic, directly to the consumers. While aiming to reduce the production costs, the team decided to invest in and promote solar energy for water irrigation in order to cut down on the fuel and electricity expenses.
- To achieve this, the team intervened on two levels: a mobile solar PV unit that can be transported to different water wells, and the “shared container” initiative to reduce the cost of supply and transport of solar PV modules to local farmers.
- The mobile unit is a solar PV system installed on a wheeled station comprised of 22 Ah battery storage and dual-mode inverter enabling charging through the electricity grid or solar energy. The system design is disseminated to farmers interested in replicating the mobile unit.

The shared container initiative enables groups of farmers to purchase solar PV modules directly from the suppliers and import them via joint containers through direct financing by Shihin Organic, which also supports the installation through local consultants in various areas. This initiative reduces costs through the supply chain and has yielded savings of 40 to 50 per cent on the cost for water irrigation.

**Source:** Authors, based on consultation with corresponding entity.

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Failure to achieving rural development through the SDGs risks escalating the food crisis and increasing poverty and unemployment levels. The growing food demand can also be seen as an untapped opportunity for employment and growth in the agriculture sector. Improving agricultural productivity and other rural productive activities is crucial to meeting the needs of the poor and eradicating poverty. However, climate change will further stress rural development, especially agriculture, which is cross-cutting in addressing climate change and food vulnerability.<sup>74</sup>

Therefore, climate change adaptation and mitigation and technological adoption play a major role in rural growth. Renewable energy is an enabler of the necessary technological adoption and dissemination and climate change mitigation.

Renewable energy systems introduced in rural areas contribute to the national adoption of new products and policy approaches<sup>75</sup> and lead to sustainable development and poverty reduction. Small-scale renewable energy systems are important factors in this as they reach the energy poor.<sup>76</sup>

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## Box 2. Rural development within the Sustainable Development Goals

The provision of sustainable rural development helps the nation in meeting the SDGs. The 2018 Lebanon Voluntary National Review highlights the shortcomings and challenges, which are exacerbated for the rural population.

- SDGs 1 and 2 on ending poverty and zero hunger: poverty is dominant in rural areas, mostly among workers in the agriculture sector. Approximately 11 per cent of households suffer from food insecurity, mainly in rural areas.
- SDG 3 on good health and well-being: the Ministry of Health covers primary care, but many Lebanese rely on private insurance, which is less accessible to the rural population. Food and waterborne diseases present significant challenges.
- SDG 5 on gender equality: women's participation in the workforce is increasing, but policies are limiting the opportunities of rural women.
- SDG 6 on clean water and sanitation: water access suffers from pollution and uncontrolled consumption. Agricultural waste is sometimes discharged in rivers and seas. The wastewater network suffers from regional differences.
- SDG 7 on clean energy: thermal energy is prevalent in electricity generation, although the country aims to increase the share of renewable energy. The supply of electricity suffers from regional disparities.
- SDG 8 on decent work and economic growth: the economic crisis has increased unemployment, especially among youth and the rural population. There is a need to create jobs in rural and marginalized areas.
- SDG 9 on industry, innovation and infrastructure: the gap between infrastructure supply and demand is increasing. Infrastructure investment and services distribution, including electricity supply, suffer from inequitable provision, especially in rural areas.
- SDG 10 on reduced inequality: reducing inequality remains a major challenge. The bottom 20 per cent of the population, most of which are in rural areas, account for only 7 per cent of the total consumption.
- SDG 11 on sustainable cities: urbanization has been increasing in Lebanon, leading to pollution, pressure on services and unaffordable housing. Rural development is crucial in reducing this negative impact.
- SDG 12 on responsible consumption and production: the country takes part in environmental treaties and conventions. Yet, a sustainable development strategy on the national and local levels is lacking.
- SDG 13 on climate action: climate change will negatively affect the most vulnerable sectors: agriculture, power generation and water supply.
- SDG 15 on life on land: population increase has negatively affected the land use and ecosystem.

Source: Authors and the 2030 Agenda for Sustainable Development.

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## 2. Financial impact

Growth in rural productive activities increases the rural Gross Domestic Product (GDP) and subsequently the national GDP, resulting in economy-wide multiplier effects.<sup>77</sup>

Increased productivity and competitiveness in the agriculture and manufacturing sectors increase rural income and national exports capacity. Attracting foreign reserves through enhanced exports is needed to remedy the country's liquidity crunches and afford the necessary imports, such as primary materials and fuel. Yet,

attracting investments requires making solutions financially viable and reducing the transaction costs while increasing returns.

The deployment of small-scale renewable energy in rural areas strengthens competitiveness in productive activities. Beyond the financial impact from increased exports, the increased reliance on renewable energy reduces the pressure on the state-owned electricity utility through lower load and the need for electricity subsidies. Thus, this reduces the fiscal deficit resulting from the electricity sector on the State budget.

As the Government moves forward in the upcoming years to eliminate the subsidies and hike the electricity tariffs, the role of small-scale renewable energy in reducing operating costs and increasing competition will be heightened. In the case where subsidies would be maintained for the vulnerable population, the agriculture sector and small industries, most of which fall within rural areas, promoting small-scale renewable energy for these consumers would decrease the necessary amounts of subsidies to be maintained by the Government.

## C. Identification of socioenvironmental and financial impact on the local and municipal level

### 1. Socioenvironmental impact

Energy, water and land use management technologies leverage the rural natural capital and lead to more productive and resilient communities in the face of climate change.<sup>78</sup> A rural development strategy that stimulates productive activities also promotes pro-poor planning,<sup>79</sup> deters rural migration towards urban areas,<sup>80</sup> makes optimal use of land and incurs environmental and health benefits.

When integrated in the value chains or productive activities such as agriculture, tourism, traditional and agricultural manufacturing, etc., small-scale renewables lead to high savings and increased revenues that enable new production lines, investments in promotional and marketing activities, and growth of businesses. These trends lead to higher medium and long-term revenues and increased rural employment. This in turn retains the rural population in their lands and attracts the young to the rural areas.

An integrated rural strategy details the optimal usage of lands and develops areas best for agricultural practices, industrial zones and natural conservation areas, promoting an enhanced productivity and multi-use of lands. On the renewable energy front, national policies set ambitious renewable energy targets that often rely on land usage in rural areas, since rural lands are more available and cheaper compared to urban lands. But this may turn renewable energy farms into direct competitors with the agriculture and tourism sectors for land use and become a primary reason for local communities opposition to renewable energy farms.<sup>81</sup> This is mitigated through small-scale systems, mainly installed on existing rooftops, that safeguard lands and receive more local community social approval.

Moreover, the integration of these systems displaces on-site and neighbourhood generators, resulting in health benefits for the local community and reduction of greenhouse gas emissions.



### Box 3. Solar microgrid in Jabbouleh, Bekaa

- Jabbouleh village in Bekaa has substituted diesel generators for a hybrid solar PV microgrid with lithium-ion battery storage, coupled to a backup diesel generator.
- The original system design comprises 1MWp of solar PV panels with a 1MWh storage system, of which 800 kWp solar and 500 kWh of battery capacity have been installed in the first stage of the project.
- 250 out of the total of the village 400 households, commercial and industrial facilities and the village's monastery are already connected to the system.
- Although the microgrid is not yet connected to the grid, it has taken into account EDL's grid and substation standards in order to enable future connections.
- The microgrid has been financed by private investors through a Power Purchase Agreement signed with the corresponding municipality for a 15-year period after which the municipality, which has provided the land, will become the owner of the assets.
- In the system model, consumers purchase electricity from the microgrid through pre-paid kWh cards and pay a one-time connection fee that covers the meter, cabling and circuit-breaker.
- In summer 2019, EDL suffered increased power rationing, which had led additional households and facilities to connect to the microgrid for reliable electricity.

Source: Authors, based on consultation with corresponding entity.



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## Box 4. Channelling diaspora funds towards sustainable rural development

The “Live Lebanon” initiative reaches out to Lebanese diaspora to support the implementation of community projects in underprivileged villages through funds or time contribution. Some of these projects have included renewable energy, mostly solar street lighting. Such initiatives and mechanisms can be extended or replicated for an integrated rural development approach focusing on small-scale renewable energy.

Source: Authors and the Live Lebanon website. Available at <http://www.livelebanon.org/>

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## 2. Financial impact

Attracting investments on the national level is challenging, and the challenge is multiplied in the case of rural areas. Financing mechanisms in support of achieving the SDGs can redirect grants and capital towards these areas through a collaboration between the Government, the international organizations and the private sector.<sup>82</sup> Technological adoption improves these prospects by building optimized and bankable projects. Small-scale renewable energy presents an opportunity for more innovative models deployment that can attract financing and channel diaspora and donor grants for the economic growth of rural areas. Renewable energy can also receive loans from microfinance institutions that are a key instrument for rural MSMEs. A key element of smaller projects as far as financing is concerned especially for the smaller lenders, is the smaller capital investment and therefore the lower weighted risk on their balance sheets. The other element is that small scale renewable energy projects provide an incentive for companies, not just commercial banks, but several sectors as well, to undertake community-based initiatives in support of their environmental, social, and governance mandates, or even as part of their corporate social responsibility programmes.

## D. Readiness and institutional capacity for entrepreneurial development

Entrepreneurship is need-based in rural areas and less common among women than men.<sup>83</sup> The entrepreneurship initiative is driven by the rural population’s need for job creation and income generation, in light of the centralized system where most jobs are located in urban areas. Many barriers for entrepreneurship are in place, including the lack of an enabling environment and the political and economic instability. Lebanese entrepreneurs rate the policy

uncertainty as a leading barrier to doing business in the country.<sup>84</sup> Recognizing the purpose and challenges for rural entrepreneurship enables a better understanding of the dynamics of starting and operating a business in these areas. On the financing side, securing early stage seed funding is less difficult than obtaining the necessary funding to grow the business,<sup>85</sup> thus leading to business inability to upscale. Moreover, the appetite for risk is low and the need for certain regular income through the regular employment is high. As a result of the high risk perception, entrepreneurship readiness remains low.<sup>86</sup> This aversion to risk is also a consequence of the absence of government support, financing mechanisms, and the necessary skill set to manage a business, in addition to the overall business climate. The lack of necessary skills to manage and grow a business has created major barriers to entrepreneurship.<sup>87</sup> Despite these challenges, the economic crisis and the resulting high unemployment are a driving factor for entrepreneurship growth, especially among the rural population. Many have expressed their hope to create revenues through kicking-off or growing a business.<sup>88</sup>

Creating an enabling business climate and providing support therefore encourage entrepreneurs to take risks to start and upscale businesses, leading to employment opportunities. Strong institutions, adequate infrastructure, enhanced skills and technology transfer and innovation play a major role in this. Therefore, rural incubators are required to assist entrepreneurs in ideas-testing and technical support and coaching to allow them to further develop their ideas and business models.<sup>89</sup>

The liquidity crisis in Lebanon and the shortage in foreign currencies required for imports would yield more demand for local products and more focus on local tourism, creating a window of opportunity to drive the local content forward. Strategies to improve competitiveness, promote innovation, build the human capital and lower operating costs are crucial to switch from a high-import dependence country to reach a certain level of self-sufficiency in some sectors and product ranges, including agriculture, agro-food industry, handicrafts and some manufacturing products. This is also vital for women’s economic inclusion in these sectors.





# 03

## Women's economic empowerment in the rural context

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# 03 Women's economic empowerment in the rural context

## A. Policy and regulatory frameworks hindering economic participation of rural women

Gender equality is critical for economic empowerment at all levels, including rural growth and development. Yet, women in Lebanon face inequalities from discriminatory laws or the lack of necessary regulatory frameworks. Policies should help reduce these inequalities. However, the planned and adopted policies in development do not fully account for the gender context.<sup>90</sup> Further adding to the challenge is the absence of quantitative and qualitative data to inform policymaking and implementation.<sup>91</sup>

As a result, and according to the ESCWA REGEND Study on Gender Mainstreaming, Social Inclusion, Human Rights Processes and Outcomes of Access to Energy in Targeted Local Communities in Lebanon, there is a lack of laws and policies that promote women's participation in the workforce, but there are also several policies limiting rural women's ability to contribute to the economy,<sup>92</sup> including:

### 1. *The Inheritance Law*

The Inheritance Law impacts women's assets and, in many cases, denies women the right to inherit land, which directly affects rural women. As the majority of financial loans are contingent on the provision of collateral, the constrained assets capacity of women also limits the latter's access to finance and to raising capital to start or grow a business.

### 2. *The Labour Law*

The Labour Law omits agricultural workers from obtaining social security unless they are in full-time employment, which is rarely the case. It negatively impacts both women and men in the workforce, but is more severe for women as their vulnerability is multiplied by the discriminatory laws and as 75 per cent of women in agriculture are hired on a seasonal or daily basis.

### 3. *Lack of regulations for minimum age for marriage*

The absence of a regulation defining the minimum age for marriage eliminates the rural girls ability to pursue an education and a career. Thus, rural women are restricted to household management and children raising roles, limiting the economic opportunities of rural women.

These regulations or lack therefore marginalize women's economic participation in rural areas.



#### 4. Lack of Science, Technology, Engineering and Math (STEM) education

Women are seldom directed towards seeking an educational degree in STEM, which limits their employment sectors. Instead, a large share of rural women works in the agriculture sector that provides employment to 40 per cent of the rural population.

## B. Financial challenges of women's access to market

Access to finance is a main deterrent to women's participation in the productive sectors and the low access to finance is exacerbated for rural women. Women's low capacity to secure the required collateral guarantee to access soft loans, especially in rural areas, is leaving them with limited access to finance. The gender inequality in the inheritance law and the denied access to land ownership in several cases further aggravate that. According to International Finance Corporation (IFC) data, only 3 per cent of soft loans from local commercial banks in Lebanon were held by women entrepreneurs.<sup>93</sup> Despite the limited data, the figure may be lower for rural women. Adding to the challenges of access to finance for rural women is the latter's risk-aversion and cultural roles requiring in several instances the man's consent to participate in the workforce or start a business.

Another issue is that most rural women lack access to a bank account and the financial capacity to open one. The financial crisis in Lebanon and banks aspiration to reduce liability may result in a higher number of individuals without access to the banking system. As rural women have no or low income and wealth, access to a bank account amidst the crisis will worsen, further reducing these women's ability to access finance.

On the skills level, rural women have low capacity to conduct a feasibility study and lack the awareness and enabling environment to launch a business or even a cooperative. Thus, the necessary support, management tools and guidance are mostly absent, and reflect negatively on the ability to attract investments.

Attracting investments in rural areas, especially for women-led ventures, will remain challenging in the absence of a regulatory and financing framework issued by the Government on the national and regional levels, and detailing specific measures to enforce the business climate. Therefore, rural women's access to finance is still largely dependent on government or donor financing mechanisms and in-kind contributions.

At time of writing, the Government of Lebanon, with the financial support of the World Bank, launched the Lebanese project of the regional Women Entrepreneurs Finance Initiative (We-Fi) in 2019 to promote e-commerce and exports for women-led businesses, as a medium to provide them with access to markets and financing. The project aims to train 20 e-commerce advisors and provide a platform to 125 women-led SMEs. The project, which will focus on exports, is in its early stages, and the application process remained open until the end of November 2020. A main barrier to reaching the exports markets are the low compliance with international standards and the local customs fees and complicated process.<sup>94</sup>

Women-led cooperatives are also receiving support from international organizations. In collaboration with Ministry of Agriculture, FAO has launched "Raedat El Rif" project in March 2020, aiming to support 250 women cooperatives and associations in the agri-food sector by providing guidance on how to reach profitable businesses.<sup>95</sup>

One of the local commercial banks, BLC Bank, launched the first bank programme in the Middle East and North Africa region, aiming to empower women economically, based on the IFC recommendations for more economic women inclusion. The programme provided women employees and entrepreneurs with financial and non-financial services, including capacity building on management, innovation and running a business. The programme reports a 55 per cent increase in the number of loans granted to women led businesses.<sup>96</sup> The future of the programme remains unknown in light of the financial crisis.

The lack of collateral guarantee provision and access to bank accounts and know-how limits women's ability to start a business, explore new revenue streams, reach new markets or even participate in trade and products exhibitions.

## C. Capacity building and prompting cultural changes in frameworks and administration

Rural women's limited economic participation resulting from discriminatory regulations and lack of access to finance is rooted in structural issues, social norms and cultural dynamics. Rural women still fulfil a traditional role, despite some improvement for urban women in the workforce.<sup>97</sup> Women are still ruled by the patriarchal

society limiting their engagement to household works and cutting them off from economic participation. Women are therefore treated as inferior to men, and their skills and capacities are built less than men's. Social norms also limit rural women's mobility, restricting their employment and participation in economic opportunities outside their villages. This situation is leading to the economic dependency of rural women on men, further driving women's vulnerability and marginalization.<sup>98</sup>

Therefore, rural women have limited access to STEM education, technical training workshops and capacity building training. In this context, the FAO "Raedat El Rif" project is training women on business management and providing them with personal coaching on business plans development.

In 2019, Konrad Adenauer Stiftung ran a series of workshops on "economic empowerment of women in rural areas", training them on financial management, marketing and branding, and providing an exhibition space to promote their products. That same year, the Environment and Sustainable Development Unit at the American University of Beirut launched the Climate-Smart Livelihoods Initiatives and Market Access Tailoring project to build the capacity of women in Baalbeck and Bekaa on sustainable agricultural practices and climate-smart food processing. The REGEND project also conducted capacity building programmes to equip rural women with entrepreneurial, marketing, branding and management skills to start and run a business or cooperative. These capacity-building initiatives have been a great success as they were customized to match the needs of the beneficiaries, improve their knowledge and enhance their skills for their own benefit and for the benefit of the entire community where they can become trainers themselves, spreading the knowledge and skills acquired in a cascading manner. This constituted a pivotal milestone in the Project's journey towards a model based on know-how rather than the classical handout model.

In fact, REGEND was selected in 2021 as an SDG Good Practice for its capacity-building initiatives and productive equipment on good practices related to agriculture, food processing and marketing, small-scale renewable energy technologies, and WEF nexus applications in rural areas.

Cultural perception also plays a major role in hindering women's economic participation, mainly in the renewable energy field. The male-dominated field, which lacks women role models, demotivates girls and women to pursue such a career.<sup>99</sup>

The lack of regulation for the minimum age for marriage negatively impacts that as well. The situation may worsen with the increasing

economic pressure, threatening to leave more rural girls out of school. In times of financial hardships, there is also the risk of younger girls being married off earlier due to household affordability constraints, or in an attempt to generate income. "This leads to child marriages, as the practice relieves the girl's family from economic stress in two ways: the prospect of receiving a dowry and the relief from having fewer mouths to feed." ... "marry off their young girls, perceiving them as financial burdens rather than potential wage earners".<sup>100</sup>

Changing the social norms will require active awareness campaigns and engagement of institutions and administrations to promote inclusion and reduce discrimination. In addition to business training, the FAO "Raedat El Rif" project is raising awareness on gender equality and gender-based violence.

The majority of public institutions dismiss reporting on the gender dimension in their work activities, although Lebanon has adopted gender mainstreaming in data collection and analysis of statistics in the 1990s.<sup>101</sup>

Overall, administrative reforms on the national level are a priority. The crises facing Lebanon require reforming public administrations. Since their establishment, the public institutions have been beset with many weaknesses, most commonly the lack of planning, weak governance and the low ability to implement any plans. The absence of policymaking, coupled with the lack of accountability, has undermined the performance of the public sector.<sup>102</sup>

As the public administration is bound to be reformed, a Ministry of State for Administrative Reforms was set up to enable better service provision to the citizens, enhance the economic recovery, reduce the size of the public sector, increase technological adoption and fight corruption. The gender component is not part of the Ministry, but ensuring inclusiveness through the reforms is necessary. In 2016, the Ministry of State for Women's Affairs was created to achieve gender equality and empower women and girls as per SDG 5. The ministry was renamed to the Ministry of State for Women's and Youth Economic Empowerment in January 2019, with a focus on women's economic empowerment. In January 2020, and following a series of protests, a 20-minister cabinet instead of the usual 30 was formed, and a minister of women affairs was not appointed. In addition, the same minister was put in charge of the Ministry of State for Administrative Reforms and the Ministry of Environment.

Promoting gender equality is a global Sustainable Development Goal. Reaching it requires the elimination of all sorts of discrimination against women. While some barriers are culturally entrenched,

amending the laws to eliminate all forms of marginalization and promote a more inclusive environment is a necessary first step in changing cultural behaviour towards women.

## D. Building synergies in technology, renewables and entrepreneurship


An adequate policy framework should ensure equal participation of women in roles they have so far been marginalized from, attract sufficient financing and develop an entrepreneurial mind-set and culture.

Minding the educational and capacity gap requires efforts to design technical programmes and boot-camps for women's capacity building in non-traditional roles, including renewable energy. This will set the ground for new employment roles for women in establishing rural renewables enterprises. These skilling programmes should meet the growing market demand, enabling the participants to find and create jobs after completion.

In this regard, the local NGO Rise2030 aims to empower women and youth to contribute to energy transition in Lebanon. In collaboration with the René Moawad Foundation, UNDP and start-ups accelerator Berytech, Rise2030 is providing solar energy training to women in deprived Lebanese communities. In March 2020, an all-women team trained by the NGO installed solar panels of a system powering a waste-sorting facility in Qaraoun in the Bekaa region.<sup>103</sup> To accelerate job creation, integrating technologies and renewables in rural productive sector policies, under the rural development framework, secures new opportunities and market shares. Thus, enabling women entrepreneurs to ensure their search for jobs and innovation serves a purpose or fills a market need.

Developing institutional capacity and the adequate policy guidelines is necessary to establish an enabling environment in which women can thrive, and which promotes technology adaptation. Including gender mainstreaming and technology adaptation targets and indicators sets the ground for the more entrepreneurial women. This would also attract foreign donors, development programmes and financing institutions funding, therefore also minding the financing gaps. There is also an important role for the media in promoting role models and presenting new roles and opportunities for women.





# 04 Small-scale renewable energy opportunities and challenges within the rural context

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# 04 Small-scale renewable energy opportunities and challenges within the rural context

## A. National and local renewable energy targets

Renewable energy targets and action plans create an opportunity to build technology, foster innovation and attract investments. In the context of Lebanon, the Government committed to a 12 per cent renewable energy by 2020 at the UNFCCC Conference of the Parties in Copenhagen in 2009. The commitment was only further clarified in the 2010 electricity policy paper which set that the target aimed at is reaching 12 per cent of the electric and thermal supply from renewable resources by 2020. The defined action plan for reaching the target was set through the National Renewable Energy Action Plan (NREAP) (2016-2020).<sup>104</sup>

By the end of 2018, the total installed renewable energy capacity stood at approximately 7 per cent, with the largest share being hydropower, and the renewable energy share of the total annual electricity production being 2.98 per cent.<sup>105</sup>

Although the energy efficiency and the renewable energy action plans do not have local targets, the NREAP includes a segregation of utility-scale solar PV farms capacity by region, and several of the pledged measures of the two National Energy Efficiency Action Plan (NEEAP) (2011-2015 and 2016-2020) include decentralized generation and off-grid renewable energy for the agriculture sector. In fact, the first NEEAP (2011-2015) included piloting off-grid solar photovoltaic pumps in agriculture areas in 2012. The second NEEAP (2016-2020) estimated that there were 17,000 wells in the agricultural areas with 17,000 pumping stations, and proposed the installation of 100 variable speed drive for water pumps, which would result in expected savings of 50 per cent on pump electricity consumption.<sup>106</sup>

In November 2018, the Government of Lebanon extended its target from 12 per cent to 30 per cent of the total electricity and heat from renewables by 2030.<sup>107</sup> The planned capacities per technology and the expected power generation and share of renewable energy of the primary energy demand for the years 2020 and 2030 were listed in the NREAP (table 6). These planned renewable energy projects were echoed in the Conférence Economique pour le Développement (CEDRE) Capital Investment Plan in 2018, in addition to expected investment costs.

**Table 6.** Lebanon renewable energy 2020-2030 plans

	2020				2030			
	Capacity (MW)	Generated Electricity (GWh)	Energy (ktoe)	Investment Cost (\$ million)	Capacity (MW)	Generated Electricity (GWh)	Energy (ktoe)	Investment Cost (\$ million)
Wind	200	595.7	128.7	340-490	450	1,422.60	307.3	425-612.5
Utility PV	150	240	51.8	225	300	480	103.7	450
Distributed PV	100	160	34.6	321	150	240	51.8	481.5
Concentrated solar power	50	170.6	36.8	300	100	341.2	73.7	600
Solar power heater	1,053,988 m <sup>2</sup>	685.5	148.1	192	1,716,835 m <sup>2</sup>	1,116.60	241.2	312
Hydro	331.5	961.9	207.8	264.1	473	1,677.30	362.3	
Geothermal	1.3	6	1.3	5	15	69.2	15	57.7
Bioenergy		771.5	166.6			1,177	254.2	
Total renewable energy		3,591.2	775.7			6,523.9	1,409.2	
Total primary energy demand		29,578.7	6,389			52,032.4	11,239	

**Source:** Government of Lebanon, (2018) Capital Investment Plan, p. 114. Available at <http://www.pcm.gov.lb/Admin/DynamicFile.aspx?PHName=Document&PageID=11231&published=1>.

## B. Incentives for small-scale renewable energy implementation

The deployment of decentralized, small-scale renewable energy technologies requires a set of policy and financing incentives to grow the market and the investment in these projects. In this regard, Lebanon has adopted the net-metering policy and is currently finalizing the community net-metering. The country benefits from several financing mechanisms, including NEEREA, LEEREFF and Kafalat Energy, detailed hereafter.

### 1. Policy incentives

#### • Net-metering

Net-metering is an important scheme in promoting decentralized renewable energy generation for the significant savings it can generate to consumers. The net-metering mechanism is a billing scheme allowing those who implement renewable energy systems to receive credit for the electricity they do not consume in their

facilities and, instead, inject into the national grid. Despite being implemented in Lebanon, the scheme suffers from management and technical issues.

The net-metering scheme was adopted by EDL, the Ministry of Energy and Water and the Ministry of Finance in 2011.

The process should be simple and has become digitized with the application form listed digitally on the EDL website. Yet, getting the approval and the necessary bi-directional meters that read the electricity transferred to and from the utility is a lengthy process that lasts several months.

EDL is mandated to install all the meters, but the utility's provision of bi-directional meters has been a slow process. The process is also hindered by the low resources dedicated for this scheme.

On the other hand, the power shortage presents a technical barrier: during electricity utility blackout periods, the consumer cannot inject electricity back into the grid. Moreover, the billing period is from 1 January to 31 December, and optimizing the process based on the yearly profile of solar irradiation requires an adjustment of the billing period from 1 February to 31 March.

In addition to the net-metering process mentioned above, EDL, in collaboration with UNDP, drafted a community net-metering process enabling communities to implement renewable energy projects and benefit from them. Such a scheme would heavily promote rural renewable energy projects and attract investments to rural areas, but it also faced technical barriers related to the grid weak status, which was later rectified, as well as ongoing regulatory barriers. In fact, the community net-metering requires the community to be registered through an energy cooperative and receive EDL's signature for the installation of the bi-directional meter. Yet, EDL's bottlenecks, changes in board administration and lack of manpower have delayed the process.

### • *Financial incentives*

Financial mechanisms and loans are a key driver for small-scale renewable energy, especially in rural areas where financing capacity is minimal. Several financing incentives and mechanisms were put in place by the Government, foreign donors and financial institutions to deploy decentralized renewable energy, such as the National Energy Efficiency and NEEREA loan programme, the LEEREFF and Kafalat Energy. The national economic crisis has taken its toll on these mechanisms as well, and as the liquidity shortage started looming in 2018 and the commercial banks reduced their debt exposure, these loans became more complex, and the beneficiaries were reduced. LEEREFF was then put on hold at the end of 2019 until a clear assessment of the financial situation and crisis mitigation measures are communicated by the Government of Lebanon. The high cost of private diesel generators has also played a major role in driving consumers to seek alternatives to offset that cost.

The available financing schemes are detailed hereafter:

#### (i) NEEREA

The NEEREA was officially adopted by BDL circular number 236 in November 2010 to support the deployment of renewable energy and meet the government's clean energy targets. The scheme enables commercial banks to provide long-term loans, spanning over 10 to 14 years depending on the type of institution, to finance environmental and energy efficiency and renewable energy projects up to \$10 million each, and benefitting from low interest rates ranging between 1 per cent to 2.6 per cent, and a grace period.

The application is subject to technical review by the Lebanese Center for Energy Conservation (LCEC) prior to the financial review and approval of the Central Bank. The process has been lengthy, spanning over a period of five to six months and negatively impacting the market. The key challenges facing the NEEREA loan include: (a) low communication and outreach on the national and

commercial banks level; (b) limited number of commercial banks active in the loan provision; and (c) a wide range of technologies and systems are covered through the mechanism. As a result, building envelope and green building design projects end up receiving the highest share of the loans, whereas renewable energy technologies constitute the largest number of loan recipients but the lowest loan values.<sup>108</sup>

#### (ii) LEEREFF

LEEREFF is a facility providing a credit line scheme supported by the European Investment Bank (EIB) and Agence Française de Développement (AFD) with an 80 million euro loan to support small-scale renewable energy systems ranging between \$38,000 and \$243,000. The interest rate is higher than NEEREA but is subsidized by BDL. The facility also offers free technical assistance for the project implementation, covered by the European Union.

As the local currency started depreciating and the liquidity shortage increased, the loan scheme was put on hold.

#### (iii) Kafalat Energy

Kafalat Energy scheme is part of the broader Kafalat system and provides SMEs with loan guarantees to implement energy efficiency and renewable energy systems, for up to 75 per cent of loans provided by local commercial banks and which can reach 500 million Lebanese pound, or \$333,000, spread over up to 15 years, and a grace period from six months to three years. The interest rate is 2.5 to 3 per cent.

These financial incentives are critical for the implementation of small-scale renewable energy for rural activities. However, raising awareness of the rural population on these schemes is lagging behind.

## *2. Tax credits and customs reduction*

In addition to the financing mechanisms, fiscal incentives in terms of tax and customs reduction on green and sustainable products are provided through the Environmental Protection Law 444 and its implementing Decree No. 167 of 2017. The decree contains 10 articles establishing different fiscal incentives:<sup>109</sup>

- Percentage tax cut ranging from 10 to 50 per cent through the implementation of a series of environment industry activities, including electricity generation through renewable energy sources.
- Tax credits on expenses related to environmental protection and sustainable conservation.



- Customs fee reduction on environmentally friendly products, including energy efficiency and renewable energy equipment.

## C. Regulatory barriers to rural implementation of small-scale renewables

### • *EDL Monopoly*

The state-owned utility EDL has the sole authority to generate and distribute electricity, aside from Independent Power Producers licensed by the Council of Ministers, which limits the options for renewable energy deployment. Removing the legal barriers is therefore a necessity. Despite the fact that community net-metering being in process in close coordination with EDL, the concept is still facing many hurdles. Similar to the standard net-metering policy, securing the approval and obtaining the bi-directional meter is a lengthy and complex process. This situation reduces the attractiveness of renewable energy to consumers, and negatively impacts the deployment of small-scale renewable energy systems.

Lebanon is currently discussing a decentralized renewable energy law to govern and regulate small-scale renewable energy systems and enable capital attraction. An assessment was conducted and a draft law was prepared with the support of the European Bank for Reconstruction and Development in 2019, but it remains far from being officially endorsed.

### • *Unclear construction regulations*

The lack of clear construction regulations regarding the usage of roofs to install solar PV systems on metal structures creates additional barriers to the market. As guidelines are not defined and regulations by the Ministry of Interior and Municipalities and the Department of Urban Planning with respect to solar PV rooftops and pergolas are not issued, the municipal police have in several instances halted or delayed the implementation of these works, causing damage to both contractors and consumers.

### • *Lack of regulatory directives by the various institutions*

As renewable energy is cross-sectorial and requires the involvement of different sectors such as agriculture, agro-food, tourism, etc., the various corresponding institutions have a major role to play in promoting small-scale renewable energy applications. However, the lack of regulations, decrees and circulars on the role, provision and implementation of such applications by the

corresponding ministries is negatively impacting their deployment, particularly the deployment of solar PVs, solar PV pumping and solar water heaters for guesthouses, among others.

## D. Technical and financial impediments

A set of technical and financial barriers hinder the deployment of small-scale renewable energy in rural areas.

### 1. *Technical barriers*

#### • *Need for back-up storage*

The chronic electricity supply shortage, coupled with a low voltage and low power quality, requires extensive battery backup storage so that renewable energy systems can supply electricity throughout the day, especially during night time.

#### • *Limited net-metering potential*

Net-metering functions when a grid is available. In times of utility blackout, the excess power will not be back fed into the grid, thereby limiting the potential and savings.

#### • *Absence of utility meters*

Some rural businesses and cooperatives do not have an electricity utility meter. The upfront cost of the meter can be as high as \$2,000 for 3-phase connections, and the monthly meter subscription and rehabilitation fee averages \$15 per month. In the absence of a meter, the owner/operator is limited to costly off-grid with battery systems that cannot benefit from the net-metering potential.

#### • *Absence of private generators meters*

Some rural areas are still not equipped with electricity consumption (per kilowatt-hour) meters for private generators, which annuls any potential savings from a small-scale renewable energy system since the customer is flatly billed on a per-hour-of-outage basis rather than on a per kilowatt-hour-usage basis.

#### • *High amount of non-technical losses*

Some facilities have illegal electricity connections or do not receive bills. Data collection on the facility's load and electricity consumption patterns becomes a major problem, impeding the design of renewable energy.

- ***Successive non-operational days***

Most work in rural areas, especially in the agriculture and agro-industry sectors, is seasonal. The installed renewable energy system will not be operating at full capacity, and in the absence of other schemes such as peer-to-peer, and with the constraints of the net-metering process, a large amount of electricity will be produced but not consumed. This results in unintentional over-design and negatively affects the feasibility and the payback period.

## ***2. Financial barriers***

- ***Lack of capital and access to soft loans***

Many rural businesses, especially women-led, lack the capital and cannot provide the collateral guarantees needed to access loans so that they can invest in small-scale renewable energy systems.

- ***Low revenues***

The revenues of rural businesses and cooperatives are strained by high operating costs and low returns. As a result, these businesses and cooperatives do not consider growing their businesses or investing in renewable energy.

- ***Insufficient awareness and commercial banks engagement in green financing***

The number of commercial banks involved in environmental and energy financing mechanisms is limited, and the dedicated resources and manpower for this matter is low. Awareness campaigns on these mechanisms are lacking, leaving citizens, especially in rural areas, in the dark.

- ***Complex and lengthy process to obtain a green loan***

The complex technical requirements and lengthy process to submit and receive approval for a green loan reduce the appeal of such loans.

- ***Combined financing mechanisms for large-scale and small-scale projects***

The availability of financing for large-scale projects, including green building construction, along with the small-scale renewable energy projects in the same financing mechanisms, lead to a drain of financial resources and low attractiveness of commercial banks to spend resources and manpower on financing small-scale projects.

- ***Lack of innovative energy models that can self-fund renewable energy***

Energy models, such as feed-in tariff, peer-to-peer electricity and power leasing, can provide financing tools to implement small-scale renewable energy systems or purchase green electricity. Yet, these require national policies and regulations that are not yet in place.

- ***Insufficiency of energy emphasis in donor grants***

The rural areas rely heavily on grants from foreign donors and NGOs for the different infrastructure projects. These grants tend to cover the basic humanitarian and development needs, leaving an untapped potential in renewable energy for productive activities.

- ***Lack of awareness and access to microfinance institutions***

Rural businesses may be missing on needed investments because of lack of awareness on fiscal incentives and leads on microfinance institutions. Guidelines on access to finance to be located at municipalities would improve that.

- ***Existence of electricity subsidies***

Electricity and fuel subsidies are a key deterrent for the deployment of small-scale renewable energy since state-supplied electricity is cheap and hence detrimental to the feasibility of small-scale renewable energy systems. This is offset by the lack of electricity security or reliability, and the high tariff of the backup generators for consumers who have a subscription or an on-site generator in most rural areas.



# 05 Criteria for integrated policy design and implementation

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# 05

## Criteria for integrated policy design and implementation

### A. Key shortcomings in policy indicators and follow-up

Indicators, monitoring and evaluation, which are key components in measuring impact and optimizing policies, are constrained by:

- *Lack of specific indicators to measure the level of integration of the natural resources management and climate change*

The strategy should have climate change adaptation as a core focus, and should optimize WEF nexus resources.

- *Absence of clear and measurable indicators*

An evaluation mechanism for strategies and policies, along with quantitative results, enables monitoring and follow-up building on the lessons learnt for the optimization of future policies. The spending per each strategic outcome or course of action should be measured against returns.

- *Low data collection and monitoring*

The lack of data is detrimental to policy planning. The implementation of the strategy and the evaluation mechanism enable the monitoring and collection of data.

- *Limited public engagement and data dissemination*

Data collection should inform the public on outcomes and met objectives. In addition to ensuring transparency, public dissemination of data creates confidence in the planning and attracts investments. Moreover, public consultations are critical in data collection in order to adequately address the local experience and the field challenges. Such consultations also secure citizens buy-in for the implementation phase.

- *Financing mechanisms*

Rural areas suffer from low capacity to attract investments. While some strategies include the investment costs, adequate financing mechanisms should be developed to enable the implementation.

### B. Main drivers for policy alternatives

Sustainable development leading to economic growth requires a set of sound policies, which are often driven by political will. As Lebanon faces an economic collapse and is seeking reforms, a new set of drivers is emerging and highlighting the need for an integrated rural development strategy and policy instruments, as follows:

- **Promoting sustainable and equitable growth**

Lebanon is an active participant in the SDGs process and has adopted the 2030 Agenda for Sustainable Development. A national committee was formed in 2017 to oversee the roll-out of the SDGs. It also undertook a Voluntary National Review of the SDGs in 2018, which underlined the need to maintain political and economic stability and the international community's push for that stability, as it is essential for Lebanon and the region.<sup>110</sup>

- **Ensuring food security**

Food access in Lebanon is highly dependent on imports, which increases the country's vulnerability, especially during a price shock.<sup>111</sup> The currency devaluation, which started in 2019 and intensified in 2020, and the low levels of foreign reserves, have resulted in a spike in food prices that threaten to throw a large share of the population into poverty and hunger. The 2020 COVID-19 pandemic and supply chains disruptions further highlight the importance of food security through local production and self-sufficiency, and its role in national security.

- **Alleviating economic pressure and trade imbalance**

The country's unsustainable reliance on imports has contributed to its economic crisis through deficits in its balance of payments. Economic reforms highlight the need for an increased role for local production and exports potential, of which the agricultural sector is a major enabler. Optimizing trade agreements with a focus on free trade agreements and reducing the barriers to agro-export and increasing competition are a necessity for foreign currency inflows. In fact, poverty reduction and job creation are other primary goals of the agriculture strategy.

- **Creating jobs and reducing unemployment**

The fiscal and economic crisis is leading to a surge in unemployment and is risking driving poverty to alarming rates, especially among the already vulnerable rural populations, which calls for immediate actions on this front.

- **More inclusive policy and consultation**

The trust between the citizens and governments has been eroding and drastically weakened following the Lebanese protests that have erupted in October 2019. That loss of trust is putting at the forefront the need for more public consultations and inclusive policymaking. Women have also been present strongly on the ground and even leading the movements, making sure that their voices are heard.

An inclusive women-centred approach would prioritize opportunities for the rural population, especially rural women.

- **Institutional support for rural development**

The expected transformation of the Ministry of Displaced into a ministry of rural development and the appointment of the ministerial committee present an unprecedented institutional support for rural development. A dedicated institution would set rural development as a priority on the government's agenda and reduce the barriers for a comprehensive strategy development.

## C. Defining policy guidelines

Objective: A sustainable rural development strategy creates an opportunity for rural economic growth through reliable, affordable and clean electricity as enabler.

The strategy should adopt a participatory approach with emphasis on the needs of the local communities. The strategy should ensure a coherent perspective and mechanisms for data-sharing and inclusion. There is an opportunity to rely on existing tools developed for monitoring and coordination across the government, donors and NGOs, such as the tools in use through the Lebanese Syrian Crisis Response Plan, which could be re-used for rural development.

The following policy guidelines include 10 expected outcomes and 42 actions that set the ground for policymaking.

### Outcome 1: Rural socioeconomic growth

- Action 1.1: Develop an integrated rural development strategy revolving around climate change adaptation and the WEF nexus.
- Action 1.2: Adopt a new perspective for rural development, including creating special economic zones and industrial areas, clusters of working spaces for outsourcing offices and cooperatives and technology incubators.
- Action 1.3: Identify key climate, environmental and resources management targets.
- Action 1.4: Develop high-level actions and guidelines for productive sectors strategies.
- Action 1.5: Identify the challenges and opportunities to achieve these goals.

## Outcome 2: Inclusive strategy for resources management

- Action 2.1: Review land use plans and integrate rural areas territory planning.
- Action 2.2: Identify agriculture areas and mark up land usage for industrial zones and other productive activities.
- Action 2.3: Adopt climate change adaptation technologies through conservation agriculture, diversification of produce and agri-tech.
- Action 2.4: Define water management tools: grey water reuse, wastewater management, drip irrigation and other water conservation techniques.
- Action 2.5: Identify necessary technological adaptation and energy requirements.

## Outcome 3: Attract businesses and investments

- Action 3.1: Provide incentives and tax and customs reductions for small industrial and commercial operations in rural areas.
- Action 3.2: Create an enabling business environment by reducing bureaucracy and permits.
- Action 3.3: Optimize and sign free trade agreements and set initiatives enhancing agricultural produce and food quality and safety to reduce barriers to export.
- Action 3.4: Develop initiatives grouping small farmers produce for exports through a combined container. Similarly, develop initiatives grouping farmers to import necessary agricultural products and equipment in combined containers to reduce fees.

## Outcome 4: Entrepreneurship promotion and business orientation

- Action 4.1: Identify the areas that can create employment opportunities and increase women's participation through direct and indirect opportunities across the value chain.
- Action 4.2: Promote entrepreneurship through start-ups seed grants, mentorship and the establishment of rural accelerators.
- Action 4.3: Reduce registration fees and permits for rural start-ups.

## Outcome 5: Foster innovation, entrepreneurship and technology-transfer

- Action 5.1: Provide financial incentives for businesses that adopt technologies.
- Action 5.2: Develop financing mechanisms to support technology integration.
- Action 5.3: Transfer of know-how, technology and capacity building of rural women through boot camps and technical training.

## Outcome 6: Women's inclusion

- Action 6.1: Identify key growth potential for women's inclusion in productive activities.
- Action 6.2: Identify barriers to women's active participation.
- Action 6.3: Amend discriminatory laws marginalizing rural women.
- Action 6.4: Promote public engagement and town hall meetings to eliminate cultural barriers. Highlight role models.

## Outcome 7: Enhanced competitiveness

- Action 7.1: Improve competitiveness of productive activities by reducing their operating costs.
- Action 7.2: Improve the economic performance of rural productive sectors.
- Action 7.3: Include energy in rural development as part of the development strategy for agriculture, agro-food, manufacturing, tourism, health, education, water and wastewater resource management.

## Outcome 8: Deployment of renewable energy technologies

- Action 8.1: Identify rural targets and action plans to meeting national renewable energy commitments.
- Action 8.2: Optimize energy use in agriculture, agro-industry, manufacturing, handicrafts, eco-tourism, etc. through small-scale renewable energy for technology adoption.
- Action 8.3: Optimize water usage and irrigation in agriculture through adequate policies, awareness campaigns and adoption of efficient water irrigation technologies. Promote the deployment of solar photovoltaic pumps.

## Outcome 9: Optimize financing mechanisms

- Action 9.1: Attract capital investments and microfinance funding to rural areas through renewable energy deployment.
- Action 9.2: Channel diaspora funding to sustainable energy in rural areas.
- Action 9.3: Channel donor energy grants for deployment of small-scale renewable energy in rural productive activities and create donor coordination groups per region to avoid duplication of projects and activities.
- Action 9.4: Develop a cross-sectorial financing mechanism for small-scale renewable energy and energy efficiency systems.
- Action 9.5: Secure funding for sustainable rural development through climate change mitigation and adaptation mechanisms.
- Action 9.6: Explore innovative solutions, such as revolving funds, blockchain and harnessing digital finance.

## Outcome 10: Improved governance and institutions

- Action 10.1: Provide institutional support, a dedicated institution for rural development and an inter-ministerial coordination structure.
- Action 10.2: Develop a solid action plan with key performance indicators and quantitative goal, segregated by region.
- Action 10.3: Identify measurable indicators and evaluation mechanisms.
- Action 10.4: Strengthen national, municipal and local collaboration and launch public consultations.
- Action 10.5: Collect data and monitor implementation.
- Action 10.6: Ensure communities and locals alignment.

## D. Defining legal and regulatory framework guidelines

A strategic rural development legal and regulatory framework should be developed to govern rural development. The framework

can build on the existing or amended laws and regulations, with additional regulations that should be accounted for. Yet, political stability remains the major requirement for law enforcement and implementation.

Among the existing laws, decrees for the implementation of the principles of land use falling within the National Master Plan of the Lebanese Territory should be issued and adopted for better land management. As the water law is currently being reviewed, alleviating the barriers to implementing the amended law should be accounted for within the legal review. The law should include water conservation and account for the rural areas needs. Simplifying the approval process for net-metering and community net-metering will improve its execution and adoption by consumers. In this regard, bi-directional meters approved and certified by EDL should be disseminated to the distribution service providers who should be tasked with the site application since EDL lacks the necessary manpower. Clearing all the laws that regulate women's engagement in the workforce from all sorts of discrimination, especially the labour and inheritance laws, and regulating the age of marriage, should be completed along with gender mainstreaming across institutions.

Beyond the existing regulatory amendments, additional legislations should be accounted for, especially in terms of climate change, environment and clean energy. Climate change legislation should be adopted in line with the Paris Agreement and the Lebanese NDC, and should include rural targets. When a rural development framework is issued, it should incorporate the climate change and environmental laws and include an agriculture regulation integrating the food security law. Renewable energy and energy efficiency laws should be adopted to promote these applications. The decentralized renewable energy law should also be separately adopted to enable peer-to-peer electricity, power-wheeling and power leasing. This will be a key enabler, not only for renewable energy deployment in rural areas, but also for the strategic rural development and opportunity creation for the rural community.

Moving forward and building better requires Lebanon to double down on efforts related to trade exports and reduce the wide trade imbalance. Achieving this, in addition to improving business competitiveness, freeing trade agreements that facilitate exports and eliminating trade barriers, along with setting up special economic zones, should be emphasized for their role in promoting bilateral trade. Trade reforms, including reducing non-tariff barriers such as the required documentations, complexity and length of the process, should be endorsed.

The rural development strategic framework will be the basis for improved collaboration among stakeholders. On the institutional level, a dedicated ministry for rural development should be officially assigned to serve as an umbrella and combine the different rural development components. The institution should ensure a broader approach to rural development than a sole focus on agriculture. In addition to the established inter-ministerial committee, focal points within relevant public institutions should be assigned for coordination, data-dissemination and follow-up. Administrative institutions should also be reformed on the national, local and municipal levels to enable gender mainstreaming.

## E. Identifying financial guidelines and indicators

High upfront costs are a crucial impediment for the deployment of small-scale renewable energy in rural areas. Financing mechanisms should account for the rural context and the low ability to provide collateral guarantee to address the many financial barriers.

- **Soft loans for small-scale renewable energy projects**

Financial incentives, accessible long-term soft loans, low interest rates, including a partial grant and feasibility and technical assistance, need to be put in place to cover small-scale renewable energy projects across various sectors. The NEEREA loan process should be digitized and improved to yield faster results, and should consider prioritizing productive sectors, especially in rural areas and for women-led businesses. The financing mechanism must also account for a digital tracking tool enabling real-time application and process tracking, the technical review time to be reduced and training for commercial banks should be done, along with the development and dissemination of an energy solutions guide showcasing the benefits of small-scale renewable energy applications.

- **Tax incentives**

Rural MSMEs should receive fiscal and tax incentives following the implementation of a small-scale renewable energy system. Cooperatives should be allowed to apply for loans and investments under a new financing scheme.

- **International finance institutions**

International finance institutions must consider developing loan schemes for rural MSMEs that do not require a collateral guarantee.

They have to also support a power leasing scheme by setting up a funding platform, in collaboration with the private sector, to fund small-scale renewable energy systems and lease electricity to the MSMEs under a power purchase agreement.

- **Private sector**

Corporate social responsibility must seek economic benefits in rural areas and include small-scale renewable energy.

- **Microfinance**

Microfinance institutions are a key instrument in financing rural MSMEs.

- **Diaspora role, development and aid agencies**

Development and aid agencies have to consider focusing their energy grants on systems implementation for rural businesses and cooperatives. Diaspora remittances can also be channelled towards improving the economy of their hometowns and villages through small-scale renewables in productive activities.

- **Innovation and digitization**

Innovative solutions, such as revolving funds and crowd funding, along with digital finance, could secure the necessary financing, especially in light of increased digitization, where business growth will depend on its readiness for digital transformation.

- **Awareness**

Guidelines on opening bank accounts, access to finance and type of available loans need to be made available for local communities at municipalities and public institutions.





# 06 Recommendations

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# 06 Recommendations

As Lebanon works to overcome the twin shock of the economic crisis and the impact of the COVID-19 pandemic, building better becomes a necessity, and new policy drivers emerge. These include ensuring food security, promoting sustainable and equitable growth, alleviating economic pressure and trade imbalance, creating jobs and reducing unemployment, developing more inclusive policy and consultation, and the recent institutional support for rural development. These drivers lead to the need for sustainable inclusive rural development and for the Government to integrate rural development goals into achieving the SDGs. A set of policy, legal and regulatory, institutional, financial and capacity building recommendations are set hereafter:

## A. Strategy and policy formulation

An integrated rural development approach should be adopted beyond the expansion and reconstruction of the agricultural sector. A strategy must be developed based on a holistic approach to create rural economic growth, of which affordable and clean electricity is an enabler. Small-scale renewable energy systems improve competitiveness, job creation and technological adoption. These applications reassess rural areas and transform them into industrial hubs, special economic zones and clusters for outsourcing and technology incubators that create opportunities, attract investments and enhance the trade balance.

The strategy has to include specific indicators to measure the level of integration of the natural resources management and climate change. It should also have monitoring and evaluation indicators enabling follow-up, as well as clear indicators for achieving equal access of women to opportunities. Public engagement and consultation must be at the heart of stakeholders engagement to enable data collection, local experience sharing and citizens buy-in for the implementation. A set of guidelines, including 10 expected outcomes and 41 actions, are set to assist in policymaking. These outcomes are as follows:

**Outcome 1:** Rural socioeconomic growth

**Outcome 2:** Inclusive strategy for resources management

**Outcome 3:** Attraction of businesses and investments

**Outcome 4:** Entrepreneurship promotion and business orientation

**Outcome 5:** Fostering innovation, entrepreneurship and technology transfer

**Outcome 6:** Women's inclusion

**Outcome 7:** Enhancing competitiveness

**Outcome 8:** Deploying renewable energy technologies

**Outcome 9:** Optimizing financing mechanisms

**Outcome 10:** Improving governance and institutions

## B. Legal and regulatory setting

A rural development framework needs to be adopted to govern rural development. The framework can build on the existing or enhanced regulations by amending the water law. It should also clear all laws from all sorts of discrimination against women in order to reduce women's vulnerability and increase their access to land, banking systems and collateral guarantee to access financing, and through implementing the National Master Plan. Climate change legislation should be adopted in line with the Paris Agreement and the Lebanese NDC, and should include rural targets. Moreover, the Parliament should approve renewable energy and energy efficiency laws and the decentralized renewable energy law, including peer-to-peer electricity, power wheeling and leasing mechanisms. Reducing the approval process for community and standard net-metering policies will increase consumers adoption. The rural development framework should incorporate the climate change and environmental laws and include an agriculture regulation integrating the food security law. Removing the barriers for execution of all laws and ensuring political stability remain key factors in the successful implementation.

Trade agreements, especially those related to free trade, should be optimized to cover the local context and capacity. Trade reforms, including reducing tariff and non-tariff barriers and easing the export process, should be accounted for to reduce the trade imbalance.

## C. Institutional framework

Providing institutional support through a dedicated ministry of rural development is critical for rural development. The transformation of the Ministry of Displaced into a ministry of rural development will facilitate the strategy development and implementation. As the focus of the strategy should be broader than the agriculture sector and should emphasize a cross-sectorial approach, assigning focal points within relevant public institutions will ease coordination, data dissemination and follow up. A permanent political committee should be formed to ensure a high-level long-term planning and mitigation of the impact of the political instability and to improve decision-making.

The ministry of rural development should closely coordinate with the different international organizations to avoid duplication of projects and ensure focused impact of available funding. The ministry needs to closely coordinate with the local NGOs to ensure that the drafting and implementation of policies meet the needs and aspirations of the local community on the ground.

## D. Financial mechanisms

Financing mechanisms, such as soft loans, could be developed with the local and international finance institutions, including microfinance institutions, to alleviate the barriers for women's economic inclusion. The diaspora should be engaged within a framework to develop their villages through small-scale renewable energy and donor energy grants should be channelled more towards rural productive activities. Moreover, rural MSMEs ought to receive fiscal and tax incentives following their implementation of a small-scale renewable energy system. Additionally, corporate social responsibility must seek economic benefits in rural areas and include small-scale renewable energy. Finally, raising awareness on available financing mechanisms and financial incentives through guidelines should be made available for local communities at municipalities and public institutions and for farmers, specifically at NGOs and cooperatives.

## E. Capacity building programmes

Women entrepreneurship should be promoted to increase local content and production, especially in agriculture, agro-food industries, handicrafts and non-traditional opportunities such as renewable energy and technology. Training on kick-starting and managing a cooperative and a business should be delivered to rural women, in addition to the necessary skills needed to grow the business and increase revenue streams. To achieve that, integrated capacity building programmes, including in marketing, digital marketing and branding, are necessary.

In addition, technical capacity building through incubators and boot camps are critical in minding the gaps in women's technical skills. Highlighting role models in the media and holding town hall meetings and public discussions would reduce the cultural barrier. In order to ensure job creation for trained women, integrating technologies and renewables in rural productive sector policies under the rural development framework secures new opportunities and market shares. Developing capacity on the WEF nexus would also build the mindsets and account for an integrated approach in business and project design.

Increasing exports also requires capacity building on the trade agreements, required standards and trading markets. Guidelines on the export process, required documentation and expected time also set the ground for more trade awareness and readiness.



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The present case study tackles the policy and regulatory reforms and the financial and legal frameworks needed in Lebanon to promote small-scale renewable energy technologies and applications in rural areas through an integrated approach. The study analyses national strategies and policies for rural development and assesses ground-level regulations for rural productive activities, which could promote small-scale renewable energy technologies and entrepreneurial development and attract private investments. It also assesses a gender-specific approach that promotes women’s economic empowerment to access the market, and provides guidelines for the design and implementation of policies and regulatory, financial and legal frameworks to support rural development programmes that are economically, environmentally, socially and institutionally sustainable.

